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THE RELIGION OF THE OPEN MIND

BY
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AUTHOR OF
"THE WORLD'S WONDER STORIES," "THE WORLD AND US,"
"HOW LIFE GOES ON," ETC.

WITH FOREWORD BY EDEN PHILLPOTTS

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FOREWORD

“If matter starts as a beggar,” said John Tyndall, “it is because Theology has robbed it of its birth-right”; and not the least among the adventures of Rationalism is to regain the inheritance of matter and destroy for ever that malign misunderstanding which attaches to the concept of Materialism.

One may be sanguine, for the future, as well as the past, lies in the hand of evolution; and while not concerned to pretend we are evolution's chosen people, yet all progress along the line of self-consciousness redounds to human advantage.

Honest Rationalism, then, continues to be optimistic under this natural encouragement, as opposed to honest Theism, which cannot be. The latter is a negation of human will before a supreme Will, whose revelation stultifies our standards of conduct and beggars evolution at every turn; the former is an acceptance of the forces that control the universe, a saying “yea” to life, a ceaseless, joyful striving to enlarge and improve it. In the one case we postulate a conscious Will, that prescribes a line of conduct for us which it consistently evades in its own person, and demands from humanity a standard that daily grows more purified, while itself maintaining a rule hopelessly barbarous and obsolete. In the other, we confess ourselves bound

by forces which are neither just nor unjust, but irresistible and inevitable; while the obvious progress towards nobler humanitarianism we assign to evolution—a principle as proper to mind as to matter, the matrix of mind.

Along these lines of thought the author of this book has proceeded to very excellent purpose, and the cream of his work will be found in certain final constructive chapters, against which the only fault that can be alleged is that they are too brief.

The Religion of the Open Mind represents more than itself, for it means that Rationalism begins to consider constructive policies and plan an architecture that shall rise on the ground her pioneers have cleared.

Taking his own way with certain familiar material through chapters of exposition, Mr. Gowans Whyte proceeds to a design at once modest and restrained. There is no undue pretension about it; we are merely invited to consider a system of dignified and urbane conduct arising naturally from foundations of rational thought.

He is conscious that the time has come to build, and, while recognising that the death of the old faith is robbed of its terrors and means rather the easing of a burden from man's heart than any infliction of a grief upon it, none the less admits some sense of loss. There is a void, and the light of knowledge, shining through the unstained windows of the open mind, is destined to fill that void. Since the domination of the Bible vanished before the domination of the critics, liberty of thought has become a reality, and superstition is for ever powerless again to rob philosophy of its freedom. Indeed, only the serious artist is per-

secuted by piety to-day; every other sort of thinker has won his liberty.

From a luminous and picturesque narrative of human progress, which does not permit us to forget that the author also is an artist, we proceed to the conclusion that, since the struggle for existence has ever worked upward and tended to ultimate survival of moral types, no "categorical imperative" or other supernatural machinery is needed to explain the advent and advance of civilised man. Morality is part and parcel with the story of evolution; religion, on the contrary, springs from fear, and is born in the beginnings of self-consciousness, when man groped blindly through a labyrinth of myth and fetish. Fear—the fear of the invisible—is the fuel of all religion; but let that fear be banished, let mystery be accepted as precious but never fearful, and the ground of human thinking is cleansed.

One may congratulate Mr. Whyte on having loyally helped this great ideal and struck a strong blow against the fallacy that fundamental truth lies in any formula dictated by supernatural religion. Not thus can the riddle of human life be solved, or the object of human life most effectively be sought. Religion has thrown no ray of light upon that object; and if an object exists, we must acknowledge that it continues to evade our deepest physical or metaphysical conjectures.

The open mind offers a golden rule, for freedom of thought keeps the intellect clean and unprejudiced; but let our spirits fold their wings, shut their eyes, and repose upon the perch of a definite faith, and evolution is balked of her perfect work within them. Indeed, all who assent to these transcendental propositions

must stand for what is reactionary, and oppose their personal atoms of power to intellectual progress. The mechanism of that progress occupies the author's final consideration, and upon a well-reasoned hypothesis—that "spiritual values are simply the refined essence of natural values, and that the spiritual life is simply the natural life raised to its highest power"—he argues that supernaturalism has become irrelevant and outworn. A definition of true Materialism follows.

One may well hope that these temperate pages will help to make men braver, quicken thought along scientific lines, and play their part in helping to abolish "dualism"—superstition's ghostly shadow—which would still irrationally divide "flesh" and "spirit," ignore their relationship, and deny their common ancestry and material dominion.

EDEN PHILLPOTTS.

THE RELIGION OF THE OPEN MIND

CHAPTER I

THE NEED OF A MESSAGE

LIFE is a great deal more complex than it used to be. If we were to make an inventory of the average mind, we would find it stored with a thousand facts, ideas, questions, and aspirations which were unknown to the mind of a few generations ago. Since the growth of scientific knowledge in the latter half of the nineteenth century, the intellectual horizon has broadened enormously; men have adventured in new worlds of thought with the same enthusiasm, and with much the same stimulating results, as the explorers of the Elizabethan age set out to penetrate unknown countries. We live in an age which deserves to be called "spacious" in a higher sense than the time of Drake and Raleigh. Seldom a year fails to bring us some treasure from a remote region of thought or investigation; we may even tend to become—as the Elizabethan must have become—a trifle dulled in appreciation by the repetition of marvels.

This, however, is only one of the penalties of a more complicated and shifting environment. The in-

crease in the means of communication, both of things and of thought, may bring to each of us a far greater variety of interests and of information than was general in former ages, but it also obscures the old simple landmarks which guided our forefathers through life. At the beginning of the nineteenth century it was not impossible for a single individual to get a fair grasp of the sum of existing human knowledge. Now the ablest minds must be content to specialise in some minute channel, with occasional glimpses at the results secured by other specialists. In the same way, the world of religion has lost its old simplicity and comprehensiveness. Ultimate knowledge about the principles and purpose of human life used to be represented by a single institution—the Roman Catholic Church—or contained in a single book, the Bible. Everything about this world and the next was assumed to be decided, once and for all, by one or the other. Men were able to say “I believe,” or “I do not believe,” with a perfectly clear idea of what they intended their hearers to understand. They were able to state their faith in creeds which were just as definite and just as little liable to quibbles, *finesse*, and mental reservations as the Articles of Association of a joint-stock company. Although the Protestant Church was divided into sects, the separation seemed to increase the definiteness of religious authority. These were the days when the “heresy hunt” was a holy duty, and when a plain “yes” or “no” could be given in answer to every religious question.

These were also the days when the Churches spoke with the downrightness, and sometimes the arrogance, of complete conviction. Priest and parson taught the

whole duty of man with the dogmatism of archangels. Not only did they lay down the laws relating to the next world, but they controlled, or claimed to control, every detail of human activity in this world. The only people who resisted their domination were individuals of active mind and independent character—that is to say, people who were content to be their own guides in defiance of authority. The mass of the population regarded clergymen as official exponents of supernatural truth. If anyone wanted advice in things spiritual or temporal, he had no difficulty in discovering an authentic source. Failing a particular priest or preacher, he could always take up his Bible, close his eyes, open the book at random, and place his finger upon a text which would lead him through every conceivable labyrinth.

How does to-day compare with the former days of self-confident authority? The voice of the pulpit once rang in trumpet tones over a hushed and subservient world; now the clamour of the world is loud and insistent, and if we were in imagination to still it for a moment and listen to the united messages from all the pulpits of the country, we would hear little more than a confusion of contradictory claims, vague aspirations, diffident speculations, old words used in new senses, old creeds with novel and misty interpretations—all uttered with a kind of doubting persuasiveness, and with appeals to secular authorities which the convinced preacher of yesterday would have scorned to recognise. The Churches, in a word, have a multitude of messages, but no *message*.

The reason for this decay in clerical confidence is

quite simple. Criticism has permeated the Churches to a degree for which no earlier age provides a parallel. Doubtless every stage in religious evolution has known its sceptical priests—the men who were unbelievers at heart, though cynically content to make use of the power which the pretence of conformity gave them. Others there have been, and still are, who have stifled their doubts and adjusted their consciences because they were aware that no one is more helpless in this world than a penniless clergyman who has left the Church. But these sporadic cases of scepticism are quite distinct from the infection which spread through the Churches when Higher Criticism and the Renaissance of Science weakened the resisting power of ancient dogmas. Orthodoxy has now to reckon with heresy which claims to be orthodoxy itself. The people who are mainly responsible for the dissolution of certainty within the Churches are those who, in the indignant words of a leading religious journal, while “rejecting practically most of the distinctive beliefs of Christianity, insist on being reckoned as Church-people.” These men claim, in fact, a liberty of criticism totally opposed to the old idea of accepting creeds on faith and in their plain literal meaning. Thus the teaching of the pulpit has come to be a curious medley of assertion and appeal, of dogmatism and argument, of trust and doubt. Among the Christian Churches it is possible to discover every variety of belief from the absolute authority and supernatural infallibility of the Roman Church to the quasi-Rationalism of the broader Unitarianism. And within the four corners of each creed, and of every article in each creed, one finds a bewildering medley of interpretations, many of them vague and ambiguous.

The sceptical movement within the Churches has not spared even the fundamentals of doctrine. This is how a bishop summed up the situation in 1913: "Some thirty years ago there was a sort of Protestant religion, with a doctrine of the Trinity, Heaven and Hell, of Atonement and Judgment, of Resurrection and Eternal Life, which for good or evil could be more or less assumed. Such a standard has gone. I seriously doubt whether nearly half the men of the country could seriously say that they believed that Christ is God, or that he actually rose from the dead on the third day . . . their religious opinions are in complete chaos."

Again, the Rev. J. R. Cohu admits, in *Vital Problems of Religion*, that "we are trying to live in a world of antiquated theology with which we are absolutely out of touch"; and Canon Streeter,¹ in *Restatement and Reunion*, remarks that "at present, with regard to many a tenet of no small importance, if we are candid with ourselves and others—as religious people, unfortunately, so seldom are—we can only say that we truly believe that there is 'something in it,' or that it is 'more or less' true."

Scotland—once the stronghold of orthodoxy—suffers from a similar trouble. In *Facing the Facts* the Rev. D. Macmillan declares that "the truth is, what Scotland at the present time requires is a proper conception of the Church and a restatement of Christian doctrine." Elsewhere in the same volume he remarks

¹ When—early in 1915—the Bishop of Zanzibar excommunicated the Bishop of Hereford for making Mr. Streeter a Canon, the Bishop of Hereford complained that such action did not tend to edification. It certainly tends, however, to the edification of anyone who is invited to regard the Church of England as an authority.

that "it is now seen that the Bible, wonderful book though it be, is only one of the many revelations that God has made of himself to man, and that in the formation of a new creed, should the time ever ripen for its production, other factors, such as nature, reason, and history, must find a place. While thought has drifted away from the Westminster Confession of Faith and much which, even half-a-century ago, was held as infallible truth, no serious effort has been made by the Churches to formulate a new standard of belief."

Another extract from the same volume puts the matter even more succinctly. "The work of readjusting the central message of the Gospel to modern conditions of thought has not," said Dean Inge some years ago, "proceeded with sufficient rapidity. The pulpit is losing its influence as a moral and intellectual guide, partly because there is too much lip-service to old formulas, and because pulpit utterances are too complacent in tone and insufficiently direct. It must be once more confessed that the difficulty lies not so much in the personnel of the ministry as in the absence of a master-theologian with the strength of a Calvin. We want a theologian who, rejecting the discredited absolutism of authority, will restore our faith in definite coherent thinking and will convince our progressives that vagueness is not depth, and that truth is not necessarily to be found at the greatest distance from tradition. But until we get a living interpretation of Christianity in terms of hard thought, it is not to be expected that faith should exercise its full control over men's lives."

The most natural comment on this significant passage is that, if a master-theologian like Calvin were to take

the matter in hand, he would scorn the idea of "re-adjusting the central message of the Gospel to modern conditions of thought." Calvin wanted the Church to control the State; and he was responsible for the death of Servetus on the ground of heretical views on the Trinity. A twentieth-century Calvin, therefore, would see to it that modern conditions of thought readjusted themselves to the central message of the Gospel.

Even in the Roman Catholic Church, which prides itself upon immutability, the leaven of change has been working. Pope Pius X, in an Encyclical letter (1907), complains that among the works of modernists "one page might be signed by a Catholic; turn over and you think you are reading the work of a Rationalist."

This uncertainty about vital doctrines, this talk of readjustment and restatement, is a cause as well as an effect of scepticism.

When the pulpit was able to give a definite message with perfect assurance, the mass of the public was impressed by the very confidence of its tone. To doubt was to rebel against constituted and self-satisfied authority; therefore it required an abnormally vigorous spirit. But now that the voice of the pulpit is confused and diffident, even the ordinary man may take courage in his doubts.

Further than that, he is almost compelled—if he ever thinks seriously about religion—to ask questions and to investigate, because the pulpit is trying in various ways to persuade him by argument rather than to claim his allegiance to a faith in the supernatural, divinely revealed. Instead of an eternal Yea, the Churches present a series of marks of interrogation, so that even

those of us who are willing enough to accept a religion ready-made are refused the boon. We may not have taken any interest in Higher Criticism on our own account; we may not have studied for ourselves the scientific discoveries which have led to a conception of the universe so different from that embodied in the creeds; but such passivity of mind will not save us. We hear these disturbing elements described and criticised from the pulpit. In these later times, indeed, we may listen to various attempts to prove that they are confirmations, rather than contradic'tions, of the faith once delivered to the Saints. Therefore, if we have any intellectual curiosity at all or any desire to put our feet on the foundations of belief, we cannot escape the impulse to examine and to decide for ourselves.

In a great many cases—perhaps in the majority of cases—this process leads to what is apparently a purely negative position. A man will come to the conclusion, for instance, that the Bible can no longer be regarded as a revelation of supernatural truth, and that the Christian scheme of things—the fall of man and his redemption by the death and resurrection of the Son of God—must be put aside as inconsistent with the principle of uniformity of Nature and with the theory of human evolution built up upon scientific knowledge in the light of that principle. He may not formulate his denial of the truth of supernatural religion in so definite a fashion, but he realises that the Churches can tell him little or nothing that is reliable about the next world, while their teaching about the present world is at variance with the sum of human knowledge. And there he leaves the matter. He ceases to go to Church;

he does not worry any more about the purpose of life or the riddle of human destiny. He becomes what is charitably described as "indifferent," or less charitably as "irreligious."

Nevertheless, his position is only apparently negative. One can hardly imagine any man to be altogether without religion, in the broad sense. The critical process which leads to a destruction of orthodox belief is less like the razing of a city—where the sound structure falls with the weak—than like the action of a solvent in eliminating the false elements from a mixture of ideas. It leaves everything that is positive and proven; and if the study of science has gone hand in hand with destructive criticism of theology, the residue may be very considerable. But very few people take the trouble to re-arrange the residue into a new faith. They perhaps do not think that it can be built into anything so universal and so satisfying as the old faith which was founded on super-nature. They merely conclude that there is nothing more to be said on the subject, and turn—not without relief—to what one of Sir James Barrie's characters defines as religion: "the thing that interests you most." That "thing" may be their daily work, the pursuit of some science or art, the love of literature, the hope of adventure, or even some more or less dignified hobby. It is seldom anything which comes under one of the numerous definitions of religion. It is not related to ultimate problems, to questions of the history of the universe, the place of man in it, the meaning of human progress, or the mystery that lies behind visible and common things. Rarely does a man arrange his facts and theories and aspirations in systematic form so as to say, "*This is*

my ideal, and *these* are the motives which urge me to live up to it." Having found the supernatural world fail him, he turns to the natural world as to an old familiar friend, and determines—instinctively rather than deliberately—to make the best of it.

This is not a very satisfactory state of affairs, and its prevalence can only be explained by the fact that most people are so deeply absorbed in the labours and relaxations of daily life that they do not care to undertake the long and arduous process of reconstructing a faith in terms (to use the words of Dean Inge) of hard thought. On the other hand, anybody who has been sufficiently interested to examine and to reject the claims of supernatural religion must feel, when destructive criticism has said its last word, a pressing need of "fundamental ideas." The decay of the old faith may not have been accompanied, as is generally assumed, by agonies of doubt or by sorrow over precious illusions gone for ever; it may even have been like the easing of a great burden. All the same, it was something lost; it was something systematic and absolute and authoritative. Therefore its absence, though unregretted, must leave a blank in the mind.

Few people realise that the same instruments which have achieved this destruction may be used to effect a reconstruction which will satisfy every legitimate need of the human mind and heart. The negative position to which Rationalism brings us is not a "dead end"; it is really the first stage in a process with which every aspect of our life—intellectual, moral, physical, æsthetic, and social—is deeply concerned. But Rationalism does not simply substitute a positive creed for a supernatural creed. It does not simply take away the

Bible and replace it by another volume which contains the new Ten Commandments and the new Sermon on the Mount. It has no dogma save this : that salvation is by knowledge alone. It invites us to construct, on the basis of tested fact and logical inference, a living conception of the world's history, of human progress, and of the factors which tend to social, moral, and intellectual perfection. It offers no heaven in return for an act of faith ; but it holds out the prospect of a world re-created when men have, by doubting all and learning all, wrung from nature the mastery of life.

CHAPTER II

BELIEF, UNBELIEF, AND THE TEST OF TRUTH

OF all forms of religious controversy, the most barren is that which directs itself to the criticism of particular dogmas. The sole result of such an attack is the discovery that the position assailed has been abandoned, virtually if not officially, as non-essential. Similarly, when one sets out with the intention of embracing Christianity, the difficulty is to find something tangible and definite to embrace. It is not a question of sects or of ceremonies; it is a question of what is fundamental, and of how we are to interpret it.

One or two illustrations will emphasise how nearly impossible it is to get at the root of modern Christianity. Take, for instance, this remark from a religious journal: "The recurrence of the Advent season may suggest the question whether the time has not arrived when a movement might not be set on foot in the Christian Church for reviving the preaching of the Gospel. It is not too much to say that a diametrically opposite conception of what religion ought to mean has for some time past been dislodging the old summons to prepare for eternity and the revealed faith of the things invisible." Here, we may observe, the movement is desired for the benefit of the Christian Church itself. The "diametrically opposite conception" referred to is that Christianity ought to concern

itself with "the amelioration of the external conditions of human life on earth." Yet this very conception is regarded by many clergymen and others as the core of the real Gospel. The Rev. Conrad Noel wrote in *Facing the Facts* as follows: "Although in that complex network of motives, which goes to the re-statement of religion, certain lesser threads may be insincere and faulty, the main strands are strong and reliable. The urge and drive of the Catholic democratic movement among Anglicans, and the Protestant democratic movement among Dissenters, is a sincere enthusiasm for what are believed to be the forgotten truths of Christ's Gospel and Christ's Church. . . . The new evangel withdraws attention from, while still affirming the existence of, a next world. It urges that man's body and his body's needs are sacred, as well as his soul. If these things be secularism and materialism, their advocates at least believe them to be integral parts of the religion of Jesus Christ."

These passages show a direct cleavage among enthusiastic "believers" regarding the central purpose of the Church. Some cling to the next world, others to the present; some live among the shadows of supernaturalism, others among the realities of daily existence—the problems of poverty, disease, war, and even of politics. A similar contradiction of orthodoxies may be observed in connection with specific doctrines. Thirty or forty years ago the religious discussions in the monthly reviews were carried on by men like Gladstone and Huxley—that is to say, by pronounced believers and pronounced agnostics. Now there is hardly any necessity for the agnostics to take part. Every side of the question is represented by clergymen

or pro-clerical laymen. It is the Christian, not the so-called Atheist, who has been pleading for a "non-miraculous Christianity." The men who have written articles and books to prove the impossibility of believing in the Virgin Birth and the Resurrection of Christ (as once interpreted) are men in Holy Orders. Their argument is in effect a challenge—to use the Bishop of London's words—"as to whether those who denied the Virgin Birth and the Resurrection, and indeed all other miracles, could rightly exercise their ministry which, among other things, involved their repeating the creed day by day." "I know perfectly well," added the Bishop, "that the men who hold this view say that they can still honestly repeat the creed, since 'virgin' only means 'a young woman,' and they fully believe that Jesus Christ survived death; but I ask again, Is that the sense that 'virgin' has borne in the creeds for two thousand years, and was this mere survival after death the great victory *over* death which has revived the hopes of millions of mourners, and which was, to use Bishop Pearson's words, 'the eminent act of omnipotency' from which the Church took its start?"

The Bishop of London, in a sentence, does not agree "that the phrase 'the Resurrection of Jesus Christ from the dead the third day' admits of being interpreted in any sense which is consistent with his body having seen corruption like that of an ordinary man, or that the Christian hope could survive if the miracle was disbelieved"; while a clerical spokesman of the other party holds that his interpretation is "in the same sense in which, I think, St. Paul believed in it, and in which I claim any Christian may believe in it—

viz., without necessarily implying the resuscitation of the dead body which was laid in the grave."

Instances of a similar kind might be multiplied indefinitely.¹ They serve to show that there is no such thing as a prevailing orthodoxy even in the Churches themselves. The seat of authority is in a dozen places at once—which means that it is nowhere at all. It is not in the traditions of the Church, because these are abandoned or "re-interpreted." It is not in the Bible, because the once supreme domination of that book is subject to the domination of the critics, who are at variance among themselves on many points. It is not in direct personal revelation by "intuition" or "conscience," because such a message, even at its highest, has no validity except for the man who thinks he has received it. It does not lie in the proven efficacy of Church work, because the Church is not certain whether its labours should be directed exclusively towards the next world, or whether they should simultaneously face the social problems of the present and the spiritual problems of eternity. Certain advanced critics are developing proofs of the theory that Jesus Christ never existed, and that the cult of Christianity—like many an ancient cult, and also like that recently imposed upon the Japanese—is purely mythical. Looking to the existing flux of dogma, it is not

¹ For instance, Canon Maclean states that "theological professors and episcopal chaplains have been specially active of late in the throwing down of all fences of belief." And the Rev. Leighton Pullen writes that "piece by piece a system which repudiates every distinctive doctrine of Christianity while retaining Christian phraseology, has been introduced into England by the very people who ought to have warned and guarded the Church."

difficult to believe that official Christianity may readily adapt itself even to that crowning heresy.¹ The possible manner of the adaptation is suggested by the existing defence of the worship of the Virgin Mary by some Protestants. Such worship is regarded as justified by the simple fact that it has a beneficial effect on the male attitude towards women.

Amid this welter of dissolution and reconstruction, is there anything which really distinguishes Belief from Unbelief? Now that even the orthodox claim to examine their beliefs in the light of reason rather than in the glow of faith, is there any fundamental distinction between those who call themselves professing Christians and those who do not?

When we look at the matter in this broad fashion it becomes apparent that the difference between the two classes is less one of belief than of mental attitude. The doctrines of the Churches may become gradually relieved of their crudities and supernatural elements; and Christian apologists may try to become severely logical in their processes of argument. But neither the doctrinaires nor the apologists can ever reach the position which is taken up at the outset by the principles and the exponents of scepticism. Christian advocates have to speak to a brief which is placed in their hands. They may interpret that brief as they please, and they may use the most irreproachable dialectics in

¹ For instance, a course of lectures recently delivered to a Bible class by a Congregational minister developed the theme that the account of Christ given in the New Testament was originally a mystical story, which had been made the nucleus of incidents and descriptions leading people to believe that the imaginary Christ was a real person.

doing so, but the brief remains as the thing which they are passionately anxious to defend. If doubts arise, it is their duty to meet them and crush them. Triumph and contentment come when every doubt is dead or drugged. Such apologists are, in fact, very far from feeling a philosophical indifference as to whether the statements in the brief are true or not; and it is precisely this philosophical indifference which distinguishes the true sceptic. To him there is nothing sacred in a belief, however venerable, however beautiful, however consoling. He is willing to see it challenged by every form of doubt; and he is ready to discard it the moment a higher expression of truth presents itself. In a word, beliefs are to him nothing but steps towards a wider and deeper view of knowledge.

This distinction was very well illustrated during a newspaper controversy on "non-miraculous Christianity." Those clergymen who hoped to be able to treat the traditions of the Church as they pleased were sharply reminded that exponents of the faith must be thinkers "within limits." And the limits in this case are—significantly enough—set by the very doctrines which are most transcendental and difficult to prove, if not beyond proof in a natural sense—such as immortality, the existence of a personal God, and so on. That is to say, the clergy have to start from an ethereal apex of thought and work downwards to the solid earth. Their methods are diametrically opposed to those of scientific thought, which begin on the foundations of solid fact and build upwards, patiently and with increasing care as the structure grows in height. This is the real conflict between science and supernatural religion. It is a conflict of methods; and everyone in

search of fundamental ideas must make his choice between them, once and for all. He must decide whether he is to be a thinker "within limits"; he must decide whether there are any doctrines which should be regarded as sacrosanct and protected from discussion by stubborn barriers of faith.

Put in another form, the question at issue is that of the ultimate test of truth. As we have just remarked, it is more than a little difficult to define the test in the case of the Churches. But the most recent and popular definition seems to be implied in the following extract from the sermon delivered by Canon Scott Holland when consecrating the Bishop of Kensington. The Canon referred to the crumbling and shifting of creeds and convictions, and to the voices of men demanding "On what certainty can we build the house of our soul?"

What will you answer? . . . First, you will not be afraid to confess how much there is of which you know nothing. There are a hundred questions that you cannot answer. You stand, even as do your fellow-men, in a great darkness. So much there is that you don't know. So St. John felt. And if he, then you can well afford to be with him in confessing to it; only you will have the like courage, as he had, to declare that there is something that you do know. . . . And this knowledge you will offer them not merely as something to be imposed by authority, not as an external formula, not as a speculative or metaphysical doctrine based on logical argument, not as an unsupported and traditional assertion, not as a complete and rounded solution of all enigmas with clear-cut proofs and tested evidence. No, that is not its temper. Rather you will offer it as a tested and verified experi-

ence, approved through an endless variety of circumstances, under the stress and pressure of stormy days, ratified by the accumulated evidence of multitudes who have tried it and never found it wanting—an experience which has actually survived every menace and endured in face of every peril. It is this deep, undying Christian experience which you will declare and deliver, and for it, as so verified by the discipline and stress of life, you will claim certainty that cannot be gainsaid, and supreme and personal authority. “We know it is true”—so you will boldly say.

Thus, when the Bishop of Kensington is asked, “How do you know?” he is adjured to answer, “Because I know, and because thousands of other people have known.” The truth of Christianity, therefore, is proved, with a certainty which cannot be gainsaid, by the same kind of evidence as may be brought forward for the defence of Buddhism, Mohammedanism, or any other established religion. Further, any one of the doctrines which the Churches have abandoned could have claimed undying validity on the same ground. And if the existence of tens of thousands of people who declare that “they know” were a genuine proof, the passage of generations of testifiers would strengthen the evidence until it became overwhelming. But the effect of time has been the very reverse. After two thousand years of testimony the Churches are faced with the necessity of re-stating their essential position. Their apostles are, in fact, more divided than they ever were as to what that essential position should be.

Another weakness of this appeal to a purely personal standard is that the message of Christianity is bound up with many declarations about historical events and

physical phenomena. It does not deal solely with internal experience. Its fundamental doctrines are statements of alleged stupendous facts; and in respect of these the assertion that "we know they are true" is clearly irrelevant. Indeed, the assertion becomes doubly irrelevant when we consider that these alleged facts contradict, or are inconsistent with, our verifiable experience of the world.

The argument against the validity of personal conviction might be developed much further, especially by showing that a purely natural explanation may be given of the origin and growth of those ideas and doctrines which believers imagine to be a revelation. But it will be sufficient at this stage to point out that the modern inquirer refuses to accept "I know" as the test of truth. He demands *proof*; and he means by proof the same kind of demonstration as he accepts in his studies and in the ordinary affairs of life. He demands—to use the words of the Rev. D. Macmillan—"that in the formation of a new creed, should the time ever ripen for its production, other factors than the Bible, such as nature, reason, and history, must find a place." Indeed, he goes further, and demands that such factors as nature, reason, and history must be the sole basis of the new creed, and that it must be constructed upon that basis by sound logical processes. Believers must give reasons for the faith that is in them; and these reasons must be given in the legal tender of thought, realisable on demand in the authentic coin of fact. To be acceptable to the modern spirit a creed must, in short, submit to the supremacy of the scientific method.

It may be objected at once that no religion can

satisfy the highest spiritual and emotional aspirations of mankind if it has to pass through a scientific analysis. Science is represented as cold, unemotional, and iconoclastic, while "the religion that satisfies" is warm, comforting, and hospitable to visions. But the application of the scientific method to religion means no more than this: that none of the assertions of religion shall contradict facts or logical inferences from fact, and that every transcendental and speculative element shall always be recognised as such and not mistaken—as so often happens—for the deepest form of truth. Imagination and speculative thought have an essential place in the scientific system, but the scientific man never fails to note the point at which he leaves the solid ground of fact and begins to rise among the clouds. An "intuition" is never more than an intuition to him, until he brings it to the test of proof; an hypothesis never becomes a theory, or a theory a law, until it has shown its clear and confirmed connections with the realm of fact.

The relation of transcendental thought to what is generally regarded as science may be illustrated by a rough diagrammatic analogy with the familiar phenomena of commercial credit. Everyone knows that the total value of the sound "going concerns" of the world is much greater than the total value of the existing stock of gold. An increase in that stock will lead to a development of trade far in excess of the amount of the increase. The position of things is represented by the left-hand diagram, where gold values are placed at the centre of a segment of a circle, the other portions being occupied by token coins (silver and copper), bank notes, and investments of diminishing security

and increasing risk. The edifice is built on credit, which implies the ultimate translatability of any element in the wider parts of the segment into gold. When a fresh segment of gold is added, more token coins and bank notes may be issued, and each section of business is thus stimulated to the degree indicated in the diagram.

Similarly with the system of thought shown in the right-hand diagram. The nucleus is the mass of sterling facts, round which are gathered the primary "laws" of science, supporting the theories and hypotheses (accepted and provisional), beyond which extends the area of speculation. The contents of each of the upper portions of the segment are entitled to credit only in so far as they are ultimately translatable into terms of sterling fact; and a small increase in the volume of fact will have an immense effect on theories, hypotheses, and speculations. This effect was very well shown when the facts relating to the origin of species were discovered. It was even more strikingly displayed when the phenomena of radium became known. These phenomena, which could be stated almost in a few words, profoundly altered many physical theories and hypotheses, and also caused a large and still continuing growth of speculation about the constitution of matter.

Like most analogies, this comparison is useful only as an illustration, and must not be pushed too far. But just as, in commerce, it is possible for a speculative venture to lead to the finding of gold, so it is possible for a scientific speculation to bring about the ascertaining of new facts. For instance, Clerk Maxwell indulged in certain mathematical speculations about

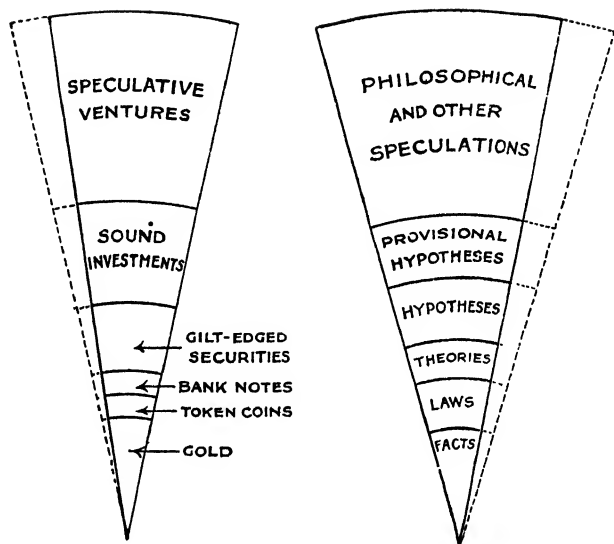


Diagram illustrating the analogy between systems of currency and of thought.

electric discharges, and so led to the demonstration of the phenomena of electric waves which are the foundation of wireless telegraphy. This case is very illuminating, because it indicates the true function of speculation. Clerk Maxwell's idea remained nothing but a suggestive speculation until it was confirmed by observations which anyone may repeat in a laboratory. Before that confirmation he might have said—with far more justice than Canon Scott Holland used the words in another direction—"We know it is true." But he did not say so; and nobody accepted it as proven until it had been brought to the scientific test.

The same line of argument applies to what may be called the emotional basis of belief. Some of the Canon's hearers were perhaps inclined to alter his words a little and say, "*We feel it is true.*" The faithful are fond of declaring that religion is a matter of the heart, not of the head. They find the idea of immortality comforting; therefore they believe in the existence of life after death. They find the Church services beautiful and inspiring; therefore they have faith in the doctrines of Christianity. In its extreme form this attitude leads to the position of the man who refused even to consider the evolutionary theory of the world because the language of Genesis carried conviction to him by its sheer magnificence.

As in the case of intuitions, the claim of emotion to be a test of truth fails because it proves too much. It proves the truth of Theosophy, Christian Science, and of a hundred contradictory religions. It also proves the faith of those who have enjoyed profound emotional satisfaction in rejecting every form of supernatural religion. Further, just as one man's intuitions

are (unless confirmed by scientific proof) nothing more than one man's intuitions, so one man's emotions have no validity for the neighbour who does not happen to share them. And even if his neighbour does share them, and feels them in common with thousands of other people, he cannot put forward a mere feeling as the criterion of truth. If truth has any meaning at all, it must be universal, and therefore independent of personal predilections. That which is proved to be true, by external evidence which everyone can examine, may appear beautiful or ugly, inspiring or depressing; but the emotions which it arouses are irrelevant, because they cannot alter the facts of the case.

Therefore, if an acceptable reconstruction of religion is at all possible, it must be undertaken on a basis of fact and composed of elements which are logically connected with fact. The next thing is to prove that such a reconstruction is possible.

CHAPTER III

THE MEANING OF "THE OPEN MIND"

No satisfactory definition of religion has ever been given. The attempts to express its meaning in a simple formula have never produced anything more than a partial description, of which Matthew Arnold's "morality touched with emotion" is a characteristic example. In this respect, however, religion is not peculiar. We may have clear ideas about what we mean by a common object like a book, or an emotion such as fear, or an intellectual process like imagination; but a definition of any such object, emotion, or conception is a matter of extreme difficulty. It may be necessary for scientific or philosophical purposes, but the ordinary man is content with the more or less definite ideas which experience gives him.

Similarly with religion. The attempt to show that a reconstruction is possible on a scientific basis need not be delayed by the practical impossibility of finding a definition which will satisfy everybody. The real necessities of the case will be met if we analyse the main contents of supernatural religion. Having made that inventory, the way will be cleared for showing the change which each item or group of items undergoes when the test of truth is applied to it.

Anyone who attends church and reads the Bible with

the eye of faith will be asked to accept certain statements about the following: (1) the origin and development of the material universe; (2) the origin of life, including human life; (3) the relation of man to the universe; (4) the nature of man, especially in connection with morality; (5) the meaning of human existence; and (6) the principles which ought to guide and sustain men in their thoughts, feelings, and actions.

There is nothing in religion—even in supernatural religion—which may not be brought within these categories. And our task will be to demonstrate that in each case the ideas associated with the opposing orthodoxies are not only less tenable, but less noble and less inspiring, than those derived from the scientific method which these orthodoxies have combined to discredit. Compared with the magnificent picture of the universe and of man which the growth of scientific knowledge has produced, the conceptions which we owe to "revelations" and "intuitions" appear crude and imperfect. It is seldom that the comparison is fairly made, because these conceptions are bathed in the glamour of sanctity. For instance, the vision of the slow evolution of the world is immeasurably more splendid and impressive than the story of creation as told in Genesis. Nowadays the pulpit smiles at that story as a primitive fable; but not so many years ago the glamour of sanctity was full upon it, and it was defended as something absolutely true and also infinitely superior to the alternative that science offered. There are many other cases in which conceptions, once held sacred, have been discarded when they were taken at their intrinsic value.

In discussing the evolution of the universe, of the

world, of life, of man, of human intellect, and of morality, this superiority of natural over "supernatural" ideas will become apparent. But the effect of applying the scientific method to the religious problem goes further. It shows how these "supernatural" ideas have arisen out of imperfect knowledge; it proves them to have been inferences from ignorance. And it also shows how they came to be regarded as a higher form of knowledge, transcending human experience and demanding belief in defiance of ordinary evidence.

Religion itself, even in its most mystical forms, is now known to be a product of natural evolution. Just as it is impossible for anyone to draw an imaginary animal which is not a composite of known animals, so it is impossible to devise a religion which is not built up from ideas gained, ultimately, from the eye, the ear, and the hand. Religion is not a thing apart; it is a generalisation from man's whole existence. It may claim to draw its data from super-sensual sources, but that claim has no value until the data are clearly shown to be such that the unaided imagination of man could never have conceived them. But every element of supernatural religion—the idea of God, immortality, heaven, hell, redemption, reincarnation, and so on—is readily explained as an inference from the state of knowledge existing at the time it appeared. The problem before the supernaturalist is very much like that which confronts the spiritualist when he asks people to believe in messages from the dead. When these messages contain something which is absolutely beyond the experience of those engaged in transmitting them, sceptics will begin to treat them seriously.

Further, it is difficult to resist the conviction that if a supernatural revelation of truth ever did take place, it would bear its hall-mark so clearly that nobody could mistake it. There would not be a hundred different revelations, with a thousand controversies about whether they were genuine or in what form and interpretation they were genuine. The difficulty which people find in accepting such revelations is attributed to moral perversity, to intellectual sloth, to spiritual blindness—to anything but the fact that the revelations appear to be human guesses masquerading as divine messages. Nobody in his senses would hesitate to welcome authentic information on the deepest problems from sources beyond human reach. It would be magnificent if the goal to which the mind of man creeps with painful slowness were to be revealed to him in an undoubted supernatural vision. Men have been alternately mocked and consoled by the thought of such a vision, but faith in it has diminished with the passage of Time. Even its possibility is, to the modern scientific temper, a matter of grave doubt, if not of total denial.

What we have to rely upon, therefore, is something very different from the acceptance of absolute truth expressed by some inspired formula. We have to accumulate the facts of experience, to arrange them, to generalise from them, and to speculate about their relations and their meaning. As our knowledge grows and is more carefully collated, so our generalisations will become wider and more secure, and our speculations will reach further and further into the unknown. The process is constant and to all appearances endless, so that anyone who expects to find truth graven on tablets of imperishable stone will be disappointed.

Truth is nothing more than the essence of organised knowledge. Its expression grows as knowledge grows, and alters as knowledge alters. It is dynamic, not static.

Herein lies the necessity of maintaining an open mind on religion, which may be regarded as sublimated truth—touched, perhaps, with emotion. Strictly speaking, all our articles of faith must be held tentatively; they must be regarded as open to amendment and even to contradiction by new facts and broader generalisations. But the principles upon which the new facts are tested and the broader generalisations are constructed remain unchanged, though the results are evolving. For instance, every discussion and every speculation about phenomena is based on the principle of the uniformity of nature, although the deductions from that principle may lead to very different results at different stages in the development of knowledge.

To those who have hugged the delusion of absolute and eternal truth, the religion of the open mind may seem nothing more than the apotheosis of uncertainty. But the principle is exactly that which guides men of science in their work; and no one will deny the enormous value of the conclusions they have reached, although every one of these conclusions is always open to modification. Some of these conclusions have had a profound effect upon what was once regarded as absolute revealed truth. We might almost go so far as to say that the doubts of men of science are closer to perfect truth than the most confident assertion that claims a supernatural sanction. In any case, the limitations of the human intellect must be accepted, even in those speculations by which man hopes to

transcend them. We may rebel against these limitations, just as we rebel against death; but such rebellion does not alter the facts of the case. And perhaps when we have made a survey of what has been attained within these limitations, and independently of the beliefs and hopes born of rebellion, we may be more content.

CHAPTER IV

UNITY IN THE INFINITELY GREAT

BEHIND every fully-grown religion there lies a conception of the origin and growth of the universe. It forms the background against which the figure of man stands out, and by means of which his relation to the scheme of things is partly explained. The Bible opens with the story of creation, and that story forms the foundation of the dogmatic system of Christianity. Until quite recently the Churches attached the greatest importance to orthodox views on this subject. The attitude of Rome towards Copernicus, Galileo, and Bruno, and the attacks made during the nineteenth century upon the geologists and biologists who built up the evidence for the theory of evolution, serve to show that a world-picture is one of the main ingredients of religion.

Here there can be no doubt that the later views derived from science are infinitely grander and more impressive than those derived from intuition or revelation. The story of Genesis, which was not so long ago regarded as a divinely-given key to an insoluble mystery, is merely a series of deductions made by primitive man from the appearance of things. It belongs to the days when the earth was thought to be a circular plane, and the sky a rigid dome in which the

stars were placed, and over which the sun and moon were driven by the power of the gods. The heavens were then very close to the world, and intimately concerned with mundane affairs. The universe had been formed out of chaos as a man builds a structure out of formless materials; it had been prepared for man, who was shaped from clay and imbued with life; and everything in that world was regarded as constructed and controlled for him alone.

It is rather an ironical reflection that the more mankind has learned about the heavens the more remote they have become, and the more insignificant have man and his affairs become in relation to them. But if the world has shrunk to a speck in the depths of immensity, men have the consolation of reflecting that they—mere specks upon that speck—have sounded those depths, weighed the sun and planets, traced their paths, analysed the stars, and discovered the void to be strewn with planetary systems in the making. The world has ceased to be something supreme in the centre of a ministering universe; it has become an episode in the growth and decay of a system which is only one of countless systems in every stage of evolution and dissolution. The drama of the cosmos is no longer cast on the narrow stage of the earth, with the sun and stars for scenery, and with a few thousand years between creation and consummation; it is pictured in immeasurable space and through immeasurable time, with neither creation nor annihilation, but with eternal change operating everywhere in accordance with laws which show no variability or shadow of turning.

The cosmogony of Genesis belongs to the infancy of astronomy. It was developed from the inventions

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of Babylonian priest-astronomers, losing a certain amount of crudity in the process, but retaining the *naïveté* which shows it to be a primitive speculation upon a very small basis of knowledge. The Greeks, aided by observation and by mathematical study, made considerable advances, reaching the idea that the earth, moon, sun, and other heavenly bodies were globes, swimming in the ether of space. The earth, however, was still regarded as the centre of the universe; and it was not until the sixteenth century or later—the age of the Renaissance, the age of Copernicus, Galileo, and Kepler—that the true position of the planets in relation to the sun began to be appreciated. The change took place when astronomy ceased to be mainly theological or metaphysical, and was placed upon a basis of scientific observation. While the ancient Babylonians sought the ways of the Gods and the fortunes of human beings in the heavens, and while the Greeks and many later philosophers accepted Plato's supposition that the motion of the heavenly bodies must be circular (because circular motion was alone "perfect"), the astronomers of the sixteenth and seventeenth centuries collected facts and deduced natural laws.

The first outcome of this change in method was the discovery of a magnificent generalisation. Science, in its progress, broadens down from generalisation to generalisation. A "natural law" is a kind of common denominator for certain phenomena; and as our knowledge of phenomena grows wider and becomes more systematic, we are able to perceive new inter-relations and to discover denominators common to an ever-widening range. Until the days of Kepler and Newton

nobody seemed to have thought of a common denominator for the solar system. But Kepler showed that the planets moved round the sun in obedience to certain "laws" or sequences; and Newton followed with the explanation that these sequences were due to gravitation, acting uniformly throughout the system.

This idea of unity in the solar system is so familiar to us that we take it almost for granted. But to the world in the seventeenth century it was a true revelation. And it has led quite naturally to a generalisation about the whole stellar universe. The telescope, the spectroscope, and the camera have revealed the operation of gravitation among the stars and nebulae, so that we reach the conviction that the forces which control the fall of an apple to the earth govern the motions of every mass of matter within telescopic range. From the idea of unity in the solar system the mind of man rose to the conception of unity in the universe.

It was almost inevitable that this new explanation of the solar system should give rise to fresh speculation about how the earth had come into being. Unity of mechanism might seem, in fact, to imply unity of origin. The picture of a huge central sun, with its series of revolving planets, each with its revolving satellites—all obeying laws which could be expressed in simple mathematical formulæ—suggested to more than one far-reaching mind that sun and planets and satellites were developed from a single primeval mass. This idea was first definitely outlined by Kant, who treated it mainly from the standpoint of a philosopher; it was later—and independently—developed by Laplace, mainly from the standpoint of a mathematician. They traced the growth of the solar system from a

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diffused mass or nebula which, in contracting and revolving, gave birth to a succession of planets, which in turn gave birth to satellites, leaving the sun as the glowing nucleus of the vast cloud which had once stretched beyond the farthest limits of the system. The comets, asteroids, and meteorites were the thrums of this mighty weaving.

There was, of course, a good deal of crudity about the details of the nebular hypothesis when it was first set forth; and the attempt to follow out the process in the light of modern knowledge is by no means free from difficulties. But the passage of time has only served to enhance the essential grandeur and truth of this, the first application of the idea of evolution, or progressive growth, to the physical world. Kepler and Newton opened the eyes of mankind to the vastness of space; Kant and Laplace revealed the vastness of time. And in both cases there was shown the operation of uniform cause and effect, leading to results which had previously been "explained" by the bankrupt method of referring them to supernatural agencies.

The most significant thing about the nebular theory is that it receives its confirmation in the study of the distant heavens. The origin of the earth is indicated by what we observe in the depths of stellar space.

William Herschel was the first to construct telescopes powerful enough to show the existence of the thousands of *nebulæ* with which the heavens are strewn. It is probable that Laplace had the benefit of Herschel's discovery of these glowing masses, which exist in various stages of condensation, from diffused clouds to stars with an envelope of haze. Subsequent improve-

ments in telescopic power, aided by the use of the camera, have made us acquainted with the structure of these nebulae, while the spectroscope has indicated their composition. The outstanding result of these investigations is that nebulae tend to assume a spiral form, like a huge whirlpool of luminous vapour. Laplace conceived that planets were formed from rings which detached themselves from the revolving and shrinking nebula. Thus the rings of Saturn were supposed to be a planetary body in the making. But the process, as we trace it now, is one of condensation from the arms of a spiral. Beginning with a cloud of gas, the particles of which are in continual agitation, the first stage is the development of rotary motion in the mass. This has the effect of flattening the cloud to a disc with a denser nucleus, which, by revolving at an increasing rate as it condenses, tends to draw the surrounding matter in spiral trails after it. More than half of the nebulae appear to be in this disc-like spiral stage. Many of them show how the material of the spiral arms has gathered into nuclei, forming stars which revolve round the central nucleus. Astronomers can, in fact, show the links in the chain from pure nebulae or cloud-like masses, to clusters of stars, surrounded by wisps of nebulous matter. And they can show the process continued until the nebulous star becomes a white-hot sun, then yellow, then red, until it cools away and joins the rank of the "dead" bodies which appear to be scattered as freely through space as meteorites are through our solar system.

This outline of nebular evolution is confirmed indirectly by the observations which have been made of the apparent birth of nebulae or "new stars." A

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dark place in the heavens has suddenly burst into light, which, increasing and then diminishing in brilliance, has left a huge nebula. The simplest explanation of such a phenomenon lies in the collision of "dead" masses, resolving them into their ultimate elements. We thus gain some notion of how *nebulæ* might suddenly come into being, as well as how they might slowly evolve into planetary systems. So the cycle of natural operations is completed.

Our solar system occupies a circle with a radius of about eight thousand million miles, and is drifting through space at the rate of half-a-million miles a day. For fifty billion miles in every direction from the sun this space appears to be almost empty. The stellar worlds, whose dimensions are so vast as to defy appreciation, occupy the regions beyond that tremendous limit. In dealing with a theatre so enormous, and with a drama which demands indefinite æons for its progress, it is inevitable that our ideas should be largely speculative. But as our knowledge grows wider and deeper, the conception which links the evolution of the solar system to the evolution of stellar systems becomes stronger. The principle of the uniformity of nature, which we assume in every branch of terrestrial science, is extended not only to the sun and planets with which the earth claims a common origin, but also to the remotest star. As far as our instruments of observation can penetrate, we find the same elements and the same laws. The evidence of universal unity is, in fact, so strong that the suggestion has even been made that the Milky Way might be regarded as the basis of an individual system revolving and evolving. It is a

curious fact that most of the spiral nebulæ, which are looked upon as stellar systems in the making, are situated in those regions of the heavens not occupied by the Milky Way. The northern regions furthest away from the great star-belt are full of them, while the belt itself is the favourite home of star-clusters and of nebulæ which are growing old and approaching the planetary form. This arrangement, in Mr. Maunder's words, "points to the whole forming a single growth, an essential unity . . . The Milky Way forms the foundation, the strong and buttressed wall of the celestial building; the White Nebulæ close in the roof of its dome." The entire known universe may, in fact, be—like our solar system—a coherent organisation, swimming in a space so large that the dimensions of the Milky Way are dwarfed to insignificance.

In the light of speculation such as this, the older notions about the creation of the world are bound to fade and disappear. If men had always known as much as they know now, they would never have put forward the hypothesis that the universe was constructed out of nothing for the sake of the earth and one species of living thing upon it. No one, perhaps, can really disprove that hypothesis, since no one has any information at all about why the universe exists. But the hypothesis is clearly the child of vanity and ignorance. Men have always been naturally inclined, both as a sex and as a species, to regard themselves as the lords of creation. Measured by astronomical standards of time and space, they are the merest infinitesimals.

Such a conception of the universe, and of man's place in it, must have a profound effect upon the traditional elements of religion. But before that effect can be

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fully traced, it will be necessary to show how unity has been discovered in the infinitely little as well as in the infinitely great. The first discovery may be regarded as the centre, and the second the circumference, of a circle which includes such momentous problems as the origin of life and of mind.

CHAPTER V

UNITY IN THE INFINITELY LITTLE

It might be said, with a fair show of reason, that if the secret of matter were found, every problem would be solved. Even the problem of spirit would yield, because spirit, in the orthodox view, is simply the opposite of matter—being immaterial, eternal, unchanging, while matter is material, evanescent, and mutable. The puzzles which vex philosophers are in their essence puzzles about the constitution of matter.

Ancient Greece produced many speculations on this subject—some of them foreshadowing the theories adopted by science in later centuries. But the theologian did not trouble much about the matter. God had made man by breathing life into the inert clay; and it was that breath of life, not the clay, which was of value. The body was the temporary prison of the soul; the earth itself was no more than a momentary resting-place between two eternities. A sharp distinction between matter and spirit runs all through the Christian scheme of things; it digs a gulf between the living and the non-living, between men and the lower animals, between mind and brain, between energy and substance.

The ideas which most of us hold about matter are a curious compound of chemistry, physics, and theology. If we were asked the direct question, "What is

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matter?" we would probably reply that it is composed of ninety-odd elements, each distinct in its qualities; that it is acted upon by various forces—heat, electricity, chemical or mechanical energy, and so on—and that it may be associated in some obscure way with some impalpable permanency we call "spirit." Pressed for more details, we would state that each element is composed of irreducible atoms, which are the vehicles of chemical combinations and of the other changes brought about by the action of natural forces. The atoms of the various elements are regarded, in fact, as the ultimate fabric of the physical universe, created in distinct species as the animals and plants were formerly supposed to be created.

The Greeks, with their genius for speculation, formulated the idea of a "primal matter" from which all the known forms had been produced. The alchemists believed in the transmutation of the elements; and the "philosopher's stone" was the agency by which the change from one element to another could be brought about. When, in the nineteenth century, curious numerical relations were discovered between the weights of the atoms of the several elements, the idea of a "primal matter" was revived. Mutual relations suggest a common origin; they point, however vaguely, to a fundamental unity in the midst of apparent diversity. As far back as 1815 Prout suggested that hydrogen, which had the lightest atom, might be the ultimate basis of all the elements. His reason for this suggestion was that "the combining or atomic weights of bodies bear certain simple relations to one another, frequently by multiple, and consequently that many of them must necessarily be

multiples of some one unit." He pushed this line of speculation so far as to hint that bodies lower in the scale than hydrogen might exist as units and form multiples on their own account. Detailed investigation showed that this simple solution did not account for all the facts, but it served to keep the idea of a primal substance before the scientific world, and so prepared the mind for the remarkable discoveries which were made in physics towards the end of the nineteenth century.

These discoveries have been due to electrical and other experiments of a very complex character, combined with mathematics of the highest order. They deal with conceptions which are sometimes of an almost transcendental kind. Therefore it is not possible to translate them fully into every-day language; all that can be done is to describe them generally and point out their effect on our ideas of matter—the matter which goes to form human beings as well as the so-called "inert" substances in the chemist's laboratory.

Before these discoveries were made, chemists and physicists could not get beyond the atom. An atom is—in its traditional meaning—the *uncuttable* or indivisible minimum of an element. It is the smallest portion which can enter into chemical combination. The atoms were thus regarded as the ultimate bricks out of which the material universe was constructed. Consequently it came as a shock to the scientific world when the atom was first suspected of being an extremely complex body. This suspicion arose from some curious phenomena which are observed when a current of electricity is passed through a glass tube from which the air has been almost completely exhausted. A faint

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stream of light issues in straight lines from one of the electric terminals. Investigation showed that the stream consists of material particles projected from one of the terminals at a tremendous speed. These particles or "corpuscles" have a mass only one-thousandth of that of the lightest atom known. Moreover, they are all identical, and carry precisely the same charge of negative electricity. They have, in fact, come to be regarded as particles of negative electricity.

Sir Joseph J. Thomson, to whose genius we owe most of our knowledge of those corpuscles, based on his researches the theory that the atom is made up of corpuscles. He considered that the passage of the electricity through the tube split up the atoms of gas remaining in the tube. However, it is impossible that the ordinary atom should be a cluster of particles of negative electricity, for the simple reason that the ordinary atom is neither positive nor negative. It is neutral; therefore the collection of negative charges must be neutralised by an equivalent positive charge. Up to the present, experimenters have not been able to gain any such accurate knowledge of this positive charge as they have obtained of the negative corpuscles. Consequently they have had to be content with hypotheses, the most ingenious of which we owe to Sir Joseph Thomson.

Sir Joseph conceived the atom as a group of corpuscles of negative electricity, or electrons, rotating within a uniform sphere of positive electricity. Mathematical calculation shows that in such circumstances the corpuscles would form concentric rings. If there were not more than five corpuscles, they would form a single

rotating ring. Adding a sixth corpuscle would upset the stability of the system unless the sixth were at the centre, with the five revolving in a ring around it. Beyond that stage, and up to fifteen corpuscles, the system would be a two-ring one; beyond fifteen, there would be three rings; and so on. This may seem to be a rather mechanical conception of the atom, but Sir Joseph has shown that many chemical facts may be explained by assuming different elements to consist of such systems with different numbers of corpuscles. That is to say, we have reached a clear idea of how elements which display widely various properties may be composed of the same fundamental material—electricity.

In certain respects, as was inevitable, what we may call Sir Joseph's mathematical shorthand was modified in the light of later research. But his corpuscular theory is still regarded as essentially proven. It received confirmation by the wonderful phenomena shown by radium. This element is one of a group which illustrates the break-up of an atom by successive stages, some of which are accompanied by the emission or radiation of corpuscles. If we started with an ounce of radium, only half an ounce would remain after 1760 years, and only one-millionth of an ounce at the end of thirty thousand years. This suggests that radium itself is being produced by the decay of another element, such as uranium or thorium. Thus we get one hint of the "transmutation of elements." The decay of radium itself provides us with more than a hint. The process produces helium, an element first discovered in the sun; it also, at a later stage, produces polonium; and the final residue is thought to be lead.

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How is this step-by-step degeneration of the atom to be explained? Turning once more to the idea of systems of rotating corpuscles, it can be proved mathematically that a system may be stable when spinning *above* a certain velocity, but will become unstable and break up when the speed falls to that velocity. Further, when rotating above the critical velocity, it radiates energy; and this loss of energy will gradually bring the velocity down to the critical point, at which there will be a violent collapse of the old system and a re-arrangement into a new system, after the loss of some of the corpuscles in "radio-activity." Such crises occur frequently in radium: less frequently in the less radio-active substances, and not at all (under ordinary conditions) in what appear to be the permanently stable elements.

As Dr. Arthur Schuster says, "the strongest of our scientific 'instincts' is our ultimate belief in the simplicity of nature." The new theories of matter satisfy that instinct in a remarkable degree. They reduce matter to electricity, and they show the diversity of the elements to be due to the different configurations of systems of electrical corpuscles. They show how one configuration may pass into another; and they give a perfectly simple explanation of the uniformity of nature. Professor Larmor, indeed, goes further in his theory that electricity is a strain-centre in the ether—a conception which carries the idea of unity to its ultimate point. Nature is uniform, because nature is one.

Thus we reach the conception of unity in the "infinitely little" as well as in the "infinitely great."

We even perceive, in the atom itself, a rotating system not unlike that of the solar system or clusters of stars. We get a vision of atoms evolving and dissolving, as stellar systems evolve and dissolve. The fundamental "stuff" of the universe is single and unalterable, but the forms which it assumes are almost beyond knowledge in their varieties and their mutations.

The full quality and meaning of this conception of matter will become apparent when we compare it with the old ideas associated with theology.

It is no longer possible to talk about "dead" matter acted upon by mysterious "forces," and inhabited, under certain conditions, by the most mysterious "force" of all—the force of life. Matter is "alive"—alive in every grain, every molecule, every atom, and every corpuscle. We can hardly even speak of matter being endowed with energy, since we know nothing about matter except through its effect upon our senses, either directly or through the medium of instruments. That effect is always a manifestation of energy, which impresses our sense of touch, or those variations of the sense of touch which we call sight, hearing, smell, and taste.

From this point of view, there is nothing but matter in the world. That is to say, there is nothing but the manifestation of energy in some form or another. And we have examined, sifted, and analysed these multitudes of manifestations until we have found a common denominator for them in the manifestation we call electricity, which is a modification of ether. Out of that unity, acting always in accordance with its inherent properties, we can trace the evolution of the

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elements, and the combinations of the elements, and the interaction of these compounds and elements in what we describe as the phenomena of nature. This conception, as we shall presently see, includes the phenomenon of life itself, which was once regarded as infinitely remote from the phenomena of "dead" matter.

The change which science has wrought upon the theological view of the universe is an apotheosis—the apotheosis of "matter." We may speculate as we please about the reality (or the absence of reality) which lies behind the manifestations which we call matter. But these manifestations are everything we *know*; they are the fabric of our laws of nature, our theories, our emotions, our hopes; they are the basis of our speculations and our visions. The old idea was summed up in the phrase: "To God all things are possible." The new idea may be expressed in the counter claim—or, if you please, in a novel expression of the same claim: "To matter all things are possible."

CHAPTER VI

LIFE

THE proof which the study of the "infinitely little" gives us of the existence of a fundamental form of matter urges us to pursue the story of evolution further back on the scale of the "infinitely great." It urges us to picture a beginning in the form of a nebulous mass of primal matter. This "beginning," of course, is no more than a stage in an apparently endless series of transformations; but it is a convenient starting-point for the history of the solar system. It is the modern picture of what the ancients described as "chaos," or "without form and void."

As already hinted, the spectroscopic study of nebulae and stars reveals the existence of matter in a different form from that with which we are familiar on earth. It is more attenuated and less complex. There is evidence, moreover, that as the nebulae condense to stars, and as the stars grow older, the elements make their appearance in succession. The nebula is like an embryo in the womb of space; and as the embryo "grows" it becomes more complex in material and more highly organised in form. As Professor Fowler has remarked, the differences in the spectra of the stars are not to be attributed primarily to differences in composition, but to their having reached different stages in

an evolutionary process. Nebulæ show a very simple spectrum of bright lines, among which only those belonging to hydrogen and helium have been clearly identified. Stars, which are nebulæ grown old, reveal the presence of many more substances. Thus the stellar sequence appears to indicate the order of evolution of the chemical elements as well as that of the stars themselves. "All modern work," adds Professor Fowler, "tends to strengthen our belief in the chemical unity of the universe, and in an evolutionary development of stars from the primitive conditions represented by nebulæ."

The solar system represents an advanced stage in this process of development, a full description of which would occupy many volumes. The evolution of the earth itself, from the condition of a star to that of a body capable of sustaining life, offers a long series of problems which mathematicians, astronomers, physicists, chemists, and geologists have spent years in trying to solve. Even the single problem of the birth of the moon is a life-study in itself, demanding mathematical knowledge of the first magnitude. The solutions offered to these problems are so interesting that one is tempted to summarise them, and to indicate the impressive results which have been gained by following scientific lines and abandoning preconceived notions of supernatural control and interference. But we must leave the full story to be read elsewhere,¹ and pick up the thread at the time when organic life made its appearance.

When the moon was born, the earth was in a liquid

¹ *The Earth: Its Life and Death*, by Professor A. Berget (Putnam) provides a lucid description of the growth of the earth.

form, and the later appearance of a solid crust, followed by the separation of land and sea, with an upper layer of atmosphere, was a result of slow cooling. During that process life as we know it must have been impossible. Organisms can exist only within a certain range of temperature; it was only when the earth had been a dead star for an immense period of time that the upper limit of temperature was passed and life became possible.

From the traditional point of view this cooling was a preparation of the world for the creation of life. The theatre was being arranged for living things to play their part within it. From the scientific standpoint, no such preconceived purpose is read into the course of affairs. Just as the various elements appeared one by one, inevitably and according to the inherent energy of matter, when the environment permitted, so the complex form of matter, which we call a living thing, appeared when the conditions were favourable.

Not so many years ago this idea of the origin of life would have been dismissed at once as an impudent and incredible heresy. Even yet the vast majority of people refuse to believe that unaided Nature could possibly step across the gulf from the non-living to the living. They feel compelled to call in an outside creative agency, just as they did, at the height of the Darwinian controversy, in order to provide a link between the non-human animal and the human. It was argued that the difference between mankind and the brute was so great that some supernatural power must have lifted man above the highest limit of animal evolution. Man, they pointed out, had certain distinguishing qualities—the possession of a “soul,” of

reasoning power, of ability to handle tools, of conscious forethought, of imagination, and so on—which put him in an entirely different category from the lower orders of creation.

The intelligent world, however, has now become quite reconciled to the idea of natural evolution from the lowest forms of life right up to man. No break is demanded in that part of the chain of cause and effect, any more than it is in the other part which concerns the development of the globe from a nebula. Up to the beginning of life, and beyond that point, Nature is held to be self-sufficient. It is only at this critical stage that the mind reared on theology demands supernatural intervention. But to the evolutionist, who traces a continuous chain of cause and effect back into the past and forward into the future, such an intervention is a contradiction of the fundamental principle of the uniformity of nature. He does not deny the *possibility* that something quite new was brought into the world at the dawn of life. But he requires that the evidence for that something shall be overwhelming. He holds, too, that it can be overwhelming only if a simple and natural explanation cannot by any means be discovered.

We need hardly pause to note that the origin of life is not explained by referring it to supernatural sources or by talking about “vital force” or the Bergsonian “*élan vital*” or the “entelechy” of Driesch. To do so is merely to shift the burden on to the back of an absolute assumption which creates more puzzles than it pretends to solve. It is worth noting, however, that the difficulty which we find in accepting the natural origin of life is a legacy from our theological ancestors.

They believed matter to be as inert and helpless as clay in the hands of the potter. They had no conception of its marvellous structure, its infinite variety-in-unity, its ceaseless activity, or the tremendous energy which was locked away in the minutest atom. In a word, matter was to them only a thing of contempt; it supplied them with symbols for the gross and corruptible features of existence.

If, however, we tune our ideas to a more respectful conception of matter, the difficulty ceases to be oppressive. If we remember that the simplest atom is a system of revolving electrons so complex as to dazzle thought; if we remember that the various atoms, each forming its own system of the same primal matter, represent elements with an extraordinary diversity of properties; if we remember that the elements combine with each other to form substances with properties totally different from those of their ingredients, we must begin to realise that matter has potentialities beyond the dreams of theology itself. No vision which ever waked a saint to ecstasy, no miracle which ever comforted the soul with a sense of nearness to the supernatural, has surpassed the inner workings of the simplest forms of matter in their power to rouse the sense of wonder. No man who has had a glimpse into the real meaning of the most commonplace transformations of matter will afterwards feel quite easy in his mind about the impossibility of the natural origin of the living molecule itself. It will, indeed, be surprising if he does not come eventually to say with Tyndall, "By a necessity engendered and justified by science, I cross the boundary of the experimental evidence and discern in that Matter, which we, in our

ignorance of its latent powers, and notwithstanding our professed reverence for its creator, have hitherto covered with opprobrium, the promise and potency of all terrestrial life."

The margin laid down between the living and the non-living used to be so wide that chemists declared the impossibility of producing, by "artificial" means, many of the products of organic life. These products might be analysed, but they could never be built up again in the laboratory, because they were peculiar to vital processes and therefore unique. But one organic substance after another was "synthetically" produced in the chemist's laboratory without the aid of "vital force," and the margin was thus narrowed down to the impossibility of producing living matter itself. Now even that has been assailed. Experiments have been made which, if not quite convincing, at least indicate the possibility of building up molecules of living matter, as chemists have already built up molecules of albumen, alcohol, urea, and a countless series of substances formerly believed to be inseparable from the activities of living things.

The distinguishing feature of these organic molecules is their complexity. Students of organic chemistry have to wrestle with formulæ for oils, ethers, sugars, and other groups of substances, so lengthy and involved that the layman stands appalled. Protoplasm—the fundamental living matter—has a molecule composed of over one thousand atoms. When we consider the intricacy of form which lies hidden in a speck of such matter, we cease to be amazed that it should display properties different from those of less complex

substances. Reduced to its ultimate elements, protoplasm yields carbon, oxygen, and nitrogen, with traces of sulphur and phosphorus. Organic chemistry, however, has revealed series after series of compounds with an even simpler ultimate composition, but with an astonishing variety of qualities. Nature takes carbon, with a few other elements, and builds up molecules with different numbers and arrangements of atoms; and each of these molecules has its own peculiar properties. Many of the more complex ones are closely associated with the activities of one of the most complex of all—the molecule of living matter. From the structural point of view, therefore, protoplasm is a piece of natural architecture to which a very close approach is made by many substances manufactured in the laboratory.

There is no need, therefore, to feel a shock of sceptical surprise when we read of how Mr. Butler Burke used radium to produce minute imitations of living matter in a sterilised solution of beef tea. Nor is there any need to dismiss as frivolous the long series of experiments which the late Dr. Charlton Bastian made to prove that living matter can be produced from non-living materials. As soon as we reach the idea that there is nothing miraculous about life, any more than there is about the combination of hydrogen and oxygen to form water, we accept the probability that life appeared on earth when the conditions became favourable, that it may have appeared at several places and at various times, and that it may still be appearing *de novo* in as natural a way as one germ produces another.

Scientific thought is thus tending away from the idea

of a special creative origin of life. The phenomenon takes an orderly place—though a most important one—in the web of natural evolution. But the problem has another bearing on religious beliefs. It has something very definite to tell us on the subject of immortality.

The simplest organisms are apparently immortal. They are mere masses of protoplasm, which have the power of absorbing materials from the water in which they swim, assimilating these materials and thus growing. That is the characteristic life-process; and it goes on until the mass grows to a certain limit and divides into two parts, each of which is indistinguishable from the original parent. Then the two children grow until they in turn divide; and the process of reproduction by “fission,” as it is called, goes on for ever unless the entire multitude of child-parents is destroyed.

Leaving that wholesale catastrophe out of account, we have here a paradoxical kind of immortality. There is no death in the process; yet no individual persists unchanged. The interest of the situation lies in the fact that from this primitive type of existence man himself has evolved. Through all the increasing complexity of structure from protoplasm to man, the process of reproduction remains essentially the same. It is due to a separation of a portion of the parent, inaugurating a new individual. The division into sexes is a complication which does not alter the basic mechanism; it is, in fact, a natural evolution from that mechanism, as will be seen if we trace the broad lines of development from a simple cell to the plant or animal which is a congeries of cells.

The first step upwards in evolution from the primitive globule of protoplasm is the grouping of a number

of globules together in a jelly-like mass. Then we have groups of globules or cells forming compound organisms. At this stage any cell is capable of reproducing its kind, just as it is capable of assimilation and of the movement necessary to absorb food. But in the higher stages a certain division of labour begins to make its appearance. The inner cells do the digestive work, while the outer cells specialise on locomotion; and in a similar way the reproductive cells are localised. At first they are neither male nor female, but at a later stage in evolution they diverge in two characteristic directions—one towards small active male cells, and the other towards larger and passive female cells. In certain cases, such as plants and sponges, both cells are produced in the one organism, and their hermaphroditic union is the start of a new individual. Progress then tends to separate the individuals as well as the reproductive cells into male and female, dividing the species into organisms which produce sex-cells of the male type and those which produce sex-cells of the female type. Reproduction then takes place on the union of cells derived from individuals of opposite sexes. The occurrence of hermaphroditism in the higher animals is an indication of the common origin of the two sexes.

This is one aspect of the argument that Nature's concern is for the species, not for the individual. Among the lower organisms, the individual is admittedly nothing but a link in a chain which will be finally snapped if that individual does not reproduce its kind. No one troubles to argue the question of the immortality of the primitive animals, or even of the higher animals whose faculties are most closely akin to those

of man. Occasionally an exception is made in favour of dogs and other domesticated animals, on the quite excusable ground that they appear to deserve eternal life more than some men and women; but as a rule the idea of immortality is not extended beyond the human species. If, however, we admit the natural evolution of man from primitive organisms, it is difficult to see where any line can be drawn between lowly individuals which are certainly not immortal and higher individuals which are assumed to be immortal. The possession of a conscience cannot be the distinguishing mark, because many species of animal show it in a well-developed form. Nor can the gift of self-consciousness make the difference, because—as we shall see in the next chapter—consciousness in the animal rises by imperceptible degrees to self-consciousness in man. Self-consciousness is a flower which has budded naturally from the common trunk of life. We accept, without the slightest difficulty, the idea that animals are destined to grow, reproduce, and finally cease to exist; we accept also the theory that man differs from other animals in degree, not in kind. Therefore the verdict of science on the question of personal immortality goes even beyond the agnostic position of “Not proven.”

Before sketching the story of the evolution of man—and particularly of man’s mind—in relation to religious problems, a word may be said on modern theories of vitalism. These are really metaphysical theories, and no one will be surprised at their quality of vagueness, or at the frequency with which philosophers contradict each other on points about which their knowledge—in the ordinary sense of knowledge—is next to nothing.

Dogmatism always flourishes in inverse proportion to knowledge; and the conflict of dogmas is in this case intensified by the fact that the words we have to use are very imperfect symbols of things we do not understand.

The theory which is most in favour with those who cling to supernatural religion is that, in Sir Oliver Lodge's words, "Vitality signifies an interaction between material particles and some not yet understood vivifying principle which makes them to co-operate in the various functions associated with a living organism, whether it be plant or animal, of which nutrition and reproduction are the chief." This definition is popular because it leads the way to an identification of the "not yet understood vivifying principle" with God. It is merely another phase of the belief that the origin of living matter must be traced to supernatural sources. But, apart from the difficulty of realising how a "principle" which is not understood can act upon matter, there is little comfort for the orthodox in this belief. The "principle" is admittedly unable to do more than guide matter—to "aim" and "fire" it as the hand aims and fires a loaded gun; it can neither generate energy nor directly exert force. A finger-on-trigger agent of this kind is a totally different thing from the Christian God, who created matter and men, who moulds them to his will, and who devised a scheme of human salvation in the manner set out by the Thirty-nine Articles, the Westminster Confession of Faith, or any other of the many orthodox creeds. The separation of a vivifying principle from "mechanical" matter affords no logical avenue to belief in God. For the believer, therefore, there is really no improvement

on the conception that vitality is a name for certain potentialities of matter which are displayed when the necessary conditions are present, just as chemical potentialities become actual when the conditions proper for combination or disunion are brought about. Surely it is more reasonable to hold that material particles, so complex in structure and so protean in their manifestations, are in themselves capable of "co-operating in the various functions associated with a living organism."

Here, again, we may allow our instinct for simplicity to act in denouncing this dualism as an unnecessary complication. Possibly our sense of humour may also have something to say on the subject; for there is something almost ludicrous in the idea that, at one point or another in the process of assimilation, the inorganic matter absorbed by an organism comes under the passive influence of the vivifying principle, and then, at some point in the process of excretion, is released from that influence. The situation is not unlike that of the ancient problem about the precise moment at which the soul was inserted in the body of the human child.

The alternative to dualism is monism, which is generally condemned as "pure mechanism." But "mechanism" is merely a name for certain aspects of the activity of matter; and to regard matter as merely mechanical, or even merely physico-chemical, is not monism; it is merely to be the victim of a false analogy. We do not know what matter is; we give that name only to something which manifests itself to us, now in mechanical phenomena, now in chemical, now in electrical, and now in vital—all four groups of phenomena being closely inter-related. As

far as our knowledge goes, these phenomena are reducible to the activities of what we call electricity; and until metaphysicians and "vitalists" can give us something simpler and less burdened with assumptions inherited from supernaturalism than their pseudo-orthodox theories, the safest position seems to be that which was adopted by Huxley as far back as 1863: "I must adhere to what seems to my mind a simpler form of notation—*i. e.*, to suppose that all phenomena have the same substratum (if they have any), and that soul and body, or mental and physical phenomena, are merely diverse manifestations of that hypothetical substratum. In this way, it seems to me, I obey the rule which works so well in practice, of always making the simplest possible suppositions."

It has been necessary to dwell somewhat fully on this problem of life, as its obscurity affords a convenient (and often the final) refuge to those who cling to belief in something outside nature controlling it. Throughout the history of human thought the dimly understood has been the home of the supernatural. Now that the inorganic world has been brought within the dominion of law, the believers in super-physical powers point to the mysteries of life and consciousness as justification for their faith. Nevertheless these mysteries are gradually yielding to the same scientific method as gave us the accepted laws of physics and chemistry. The laws of living things are being traced in terms of the known. The scientific world moves forward in confidence that they will yet be laid down with convincing firmness. We must either march with it or lull ourselves to intellectual stagnation with vain talk of the Incomprehensible.

CHAPTER VII

MAN

MODESTY is one of the cardinal features of the scientific spirit; and the compliment thus bestowed upon that spirit has been repaid by the way in which science has induced man to take a more modest view of himself. Just as in astronomy the advance of knowledge revealed that the earth was not the centre of a subservient universe, so in the history of the globe itself the part played by the human race has gradually shrunk in relation to the time and the complexity of the events which took place on the earth.

The Book of Genesis gave a very flattering as well as simple view of the origin of man. God had built the stage for the human drama in six days; and there was nothing of any real interest in the universe except that drama, which opened with a Man, a Woman, and Another. Later books of the Bible indicate a belief that the drama would shortly come to an end, and that the universe would, as a matter of course, be then destroyed.

That view persisted until about seventy years ago, but we have moved away from it so rapidly that one almost feels obliged to apologise for mentioning it. We are all Evolutionists nowadays. Nevertheless, the influence of the old "lord of creation" idea persists, and it encourages people to argue that, instead of man being

introduced in a perfect form at the beginning of the world, he is "evolving" towards that form in some distant future which may or may not lead to "the end of the world." Nothing could illustrate the flexibility of theology better than this complete reversal of the scheme of things. One trembles to think how the early nineteenth-century divines would have welcomed the contention that the fall of man was a "fall upwards." On the other hand, although theology has turned itself inside out, it has retained the deep-seated notion of a *purpose* on behalf of mankind. We are still asked to believe that the Power behind the Veil has schemed and created and supervised solely in order to achieve the human race.

It is impossible to disprove this belief, because we can do no more than speculate in the vaguest manner about the existence of a purpose in the solar system or the universe. At the close of a lecture on Evolution, the late Mr. Dennis Hird was asked the irrelevant question: "What is the purpose of existence?" The audience kept a breathless silence for the answer, which was simply "I have not the faintest idea." No one has ever got really beyond that negative position; but the more we know of the universe and of man's place in it, the less confident we become in our natural feeling that everything was made for man. The immensities of space have a chilling effect upon such vanity, but they are not so discouraging as the immensities of time. Sir George Darwin considers that from five hundred to one thousand million years have elapsed since the moon was born from the earth. Life became possible on the earth at a period which was probably not less than one hundred million years

ago. The emergence of man from the ape-like condition is calculated to have taken place many hundreds of thousands of years ago. And the longest of these stupendous periods is only a fraction of the time which the evolution of the solar system from a nebula must have occupied.

To the Eternal, of course, time is nothing; but the corollary to this proposition is, that to the Infinite, man is nothing. These speculations, in fact, take us into ultimate regions where the pessimist and the optimist are equally lost. An immense amount of discussion has taken place on the question whether a preconceived design can be traced in the fabric of the universe. This was the central point in the controversy between Atheists and Theists; nowadays, when evolution has altered the manner in which the argument from design is stated, there is still a cleavage between those who discover an "increasing purpose" in nature and those who see no signs of Providential supervision. The controversy is likely to be endless, since it rests upon a speculative attempt to define the purpose of the Infinite. Theologians and metaphysicians guess at that purpose; men of science—so far as they are scientific—have nothing to say upon it. Strictly speaking, the theory of evolution cannot be put in the witness-box in favour of "the action of the living Deity." It shows the operation of laws which produce certain results; but about the ultimate meaning or value of these results it has nothing to say. Nevertheless it is permissible to point out that the difficulties of believing in a beneficent purpose are increased by the scientific revelation. A world made in six days according to divine specification is a very different

thing from one which has struggled into being through millions of years marked by waste, bloodshed, and abortive effort in one direction after another. Nor is it safe to point to the wonderful adaptations of means to ends in Nature. Nothing could be more ingenious than the adaptation of the mosquito as a carrier of disease. An amazing amount of forethought and skill must have gone to devising such an elaborate and effective method of inoculating man with deadly fever. Unfortunately, the forethought and skill are, from the standpoint of humanity, diabolical.

Efforts continue to be made towards reconciling the notion of Providence with the facts of the world's agony. The usual apology is that suffering is justified by the moral uplift which it produces. This explanation, however, takes no account of the suffering imposed upon animals by disease, by the elements, and by their ordained enemies. And in relation to mankind as well as animals the weakness of the apology is best realised by accepting it. If suffering is everywhere and always sent by Providence for our good, one would be impious and blasphemous to resist it. Yet the noblest efforts of men and women have been directed to the alleviation or removal of suffering. They have intervened between the hand of God and the intended sacrifice upon the altar of pain. Whatever human lips may say about the infinite intelligence and goodness of Providence, human minds and human hearts act on the belief that the world might be a much better place than it happens to be.

If we shut the door upon the infinite and turn to a more domestic view of the problem of purpose, we may get more light, if not much more comfort. The

question in its narrower form is whether the story of the world from the dawn of life onwards reveals a purpose pointing clearly to man.

The answer to this question is obviously of the greatest importance in forming religious ideas. A great deal can be inferred from any proof that the production of man was the definite object running through the whole course of the evolution of life.

There is no doubt whatever about the evolution of man from a primitive form of life. Not only can we trace that evolution, without any important "missing links," in fossil remains, but the story which these remains tell us is corroborated by the way in which each human being originates and grows. The development of the human organism, from the moment of conception to the time of birth, is a kind of summary of the race-history of man—a history which appears to have covered about one hundred million years. The human ovum is a single cell, allied in structure to the *amœba*, one of the simplest forms of life; and after a process of growth and cell-division it emerges as an organism which is amazingly complex compared with the cell from which it evolved. If we could not trace the intermediate steps in the process, the change from the cell to the infant would be regarded as incredible; but we accept it as a matter of course, and illogically reserve our wonder for the development of the butterfly from the pupa and the larva, and our scepticism for the claim that the human species has a life-history similar to that of the human individual.

The earlier chapters of this life-history are written in stone. The crust of the earth, with its layers of sandstone and limestone and other rocks, is a vast

graveyard with fossil remains of skeletons and shells to provide the truthful epitaphs of organisms which lived and died millions of years ago. These organisms were the forerunners of man, and they show how living things became more complex and more highly developed as time went on. Evidences of the existence of man appear only in the latest rocks. For convenience geologists divide the story of the rocks into five eras, as shown in the following table—archæan, primary, secondary, tertiary, and quaternary—and each of these eras into certain periods which represent characteristic modes of formation and are marked by characteristic forms of fossils. The numbers given under each era indicate the estimated age of the rocks. The table gives the periods at which each type of animal made its appearance; and it thus provides the basis for drawing up a genealogical tree for man.

THE GEOLOGICAL RECORD, INDICATING THE CHARACTERISTIC
FOSSILS OF EACH AGE.

Quaternary (500,000)	{ Holocene Pleistocene }	Man
Tertiary (5,500,000)	{ Pliocene—Ape-men Miocene—Man-like Apes Oligocene—Baboons Eocene—Lemurs }	
Secondary (13,000,000)	{ Cretaceous—Birds; flowering plants Jurassic—Marsupials Triassic—Monotremes }	transition types to mammals
Primary (35,000,000)	{ Permian—Reptiles Carboniferous—Amphibia Devonian—Dipneusts (transition types to amphibians) Silurian—Fishes Ordovician Cambrian }	marine invertebrates
Archæan (50,000,000)	{	No fossils—the age of primitive organisms.

In the earliest rocks—the archæan—there are no recognisable fossil remains, partly because the primitive forms of life were delicate jelly-like structures, and partly because these rocks suffered most from the crumpling, squeezing, and volcanic action which accompanied the shrinking of the earth at that time. The fossil record begins with organisms formed of groups of cells with a horny covering which was capable of leaving its impression on the sediment of lakes and seas. There is no sign of land-life in these early periods; everything, in fact, points to the origin of life in the sea. The first direct move towards the human structure is represented by the Silurian fishes, which had a rudimentary backbone; and the first move towards land-life is suggested by the appearance, in the subsequent Devonian period, of Dipneusts or double-breathing fishes, which had gills for absorbing oxygen from the water, and appear to have adapted their floating-bladder for breathing air. They form a connecting link leading up to the amphibians, which, like the modern seal and frog, are able to live either on land or in water. The frog, in fact, begins life as an aquatic animal.

After this momentous transition from sea to land, the next step was the evolution of the land-fish into the reptile. The earliest reptiles were lizard-like creatures, which were the ancestors of the birds and mammals, as well as of the later reptilian forms. During the secondary era reptiles existed in extraordinary variety and profusion, some of them being of enormous size. The forms which led to the mammal belonged to the smaller sizes, and the upward step seems to have been taken by animals which hatched their eggs in the

warmth of their own bodies (instead of depositing them on the ground or in nests), and nourished their young by a primitive process of suckling. The kangaroo is a survival of this type. From this stage onwards, the progress of evolution can be measured by the increase in the care which parents bestow upon their offspring. The mammals, for instance, are divided into a higher and a lower group—the placental and the non-placental—because in the former the womb is so constructed that the blood of the mother directly feeds the embryo up to the time of birth. This more intimate relation is accompanied in the upper grades of placental mammals with a lengthening period of maintenance and supervision of the young after birth—a fact which, as we shall see later, is closely connected with the mental and moral development of the human species.

During the tertiary period the mammals began to preponderate, just as the reptiles and fishes did in earlier periods. It is probable that the direct ancestors of man made their appearance some time in the middle of this period, when the lemurs were evolving various types of apes. The structural relations between man and the highest apes are very close, but the evidence points to a divergence from a common ancestor far back towards the lemur stage. That divergence is estimated to have taken place more than a million years before the first appearance of man; and it is noteworthy that during and since that period the structural changes which took place were comparatively slight. The evolution was mainly connected with the increase in size and complexity of the brain. This is particularly so after the man-ape had learned to stand upright. His brain capacity was then mid-way between

that of the chimpanzee and the lowest of modern races. Thereafter we trace his growth mainly through the increasing power to use tools, the development of language, and the growth of social life which these increasing powers made possible.

In this very rough tracing of the evolution of man we have followed a more or less continuous thread in a web of extraordinary complexity. When we isolate that thread, it appears to lead definitely towards man; but when we consider the web as a whole it is not so easy to declare that the pattern was designed for man. For one thing, the part that man plays in it is trifling, from the point of view of time—Haeckel puts it at only one-half per cent. of the geological record. But much more impressive is the colossal prodigality of life, many forms of which had nothing to do with the particular thread we have followed. Species after species rose and flourished, and then disappeared in one of those changes of sea-level or of climate which took place frequently during the history of the earth. Fossils, numerous to the limits of confusion as they are, represent only a fraction of the forms to which "insurgent life" gave birth. Each of the phases of geological history gave one group or another its opportunity to swarm over sea or land; but in the unremitting struggle for existence the ultimate survivors were only a remnant of those which were ruthlessly extinguished; and many of these survivors, such as insects, and those lowly bacterial forms of life which seem to have persisted throughout or to be generated *de novo* with overwhelming fertility, are the deadliest enemies of man. Out of this welter of life and death man

emerges obscurely, fighting every inch of his way against animate and inanimate nature, spending hundreds of thousands of years in improving the chipping of flints, learning by painfully slow degrees the use of speech, of fire, of clothing, of dwellings, and other means of mitigating the severity and the dangers of the world in which he found himself. If primitive man could have speculated about the meaning of his existence, he must have decided that the purpose of the universe was to achieve his death, not his survival. He seems to have continued to exist *in spite* of the environment which is supposed to have been shaped and finished for his habitation.

Keeping these aspects of the matter in view, it is extremely difficult to argue that the world was made simply for man, and that life was created in order that it might blossom into man. The facts of the case point in the opposite direction. "Insurgent life" has produced myriads of vanished monstrosities, forced itself into a thousand blind alleys of evolution, organised itself into countless species which exist through the destruction of numbers of other species, and mingled its harmony and discord, its beauty and horror, its carefulness and callousness, its triumphs and its failures, with a recklessness which defies the comfortable interpretations of the pious mind. It appears to exist for itself alone, and to act according to its inherent qualities, with absolute indifference to the manner in which we, the alleged justification of its activities, would have it act. Human beings are the highest known manifestation of life; but it is only our vanity which leads us to declare that they represent the sole purpose of life.

A further word may be said on the evidence for the natural evolution of man, as the important question of the origin of mind depends upon it. If we relied solely upon the geological record, which is admittedly fragmentary, there might be a loophole for uncertainty about the continuous development of the human species from primitive forms of life. But, as already mentioned, the human embryo summarises this development in such a way as to leave the matter beyond all doubt. Starting as a single cell, it divides into a hollow cluster of cells, corresponding to primitive organisms. Towards the third week it imitates the form of the lancelet, an animal which has a rod of cartilage representing a transition stage from the invertebrate to the vertebrate. In the third week gill-slits appear; and the arrangement of the rudimentary heart and arteries is likewise suggestive of the fishes. These features soon disappear; and the embryo then passes through the amphibian, the reptile, the early mammal, the marsupial, and the ape stages, until it reaches a definite human form at birth.

Even at this stage the marks of its ancestry are visible upon it. Just before birth it is covered with a coat of fine hair, like that of an ape; and immediately after birth the child is able, like an ape, to sustain itself by gripping a rod with its fingers. To these pre-natal evidences of evolution, which can be extended to the various organs, the human frame adds a large number of other evidences in the form of what may be called "vestiges of creation." Metchnikoff has made a list of about one hundred structures, which are really the shrivelled remnants of organs, or parts of organs, which were of value to ancestral animals, but are of

no use to man. The ear, the muscles under the ear, the hair on the body, the *appendix vermiformis*, the small piece of flesh at the inner corner of the eye, our atrophied and buried tail, the pineal gland—these are some of the most familiar. They tell the same sort of story about our origin as the buttons on the back of a man's coat tell about the riding habits of his ancestors, or the panelling of our railway carriages tells about their evolution from the stage coach. They are so eloquent that, even if the whole fossil record had been swept away, we could, with the aid of embryology and the comparative study of animals, retrace the main course of human evolution with confidence.

These aspects of evolution have also an indirect bearing on the question of "purpose." The gill-slits and other peculiarities which appear and disappear in the human embryo are purposeless; the vestigial organs in the adult are purposeless—unless, as in the case of the appendix, they may be regarded as providing an added danger to life and a source of profit to the surgeon. When all is said, man remains a very imperfect organism. His blood-vessels are adapted to an animal which walks on all fours; the habit of walking upright disturbs their working, and also introduces complications in the arrangements which support the child in the womb. Helmholtz declared that, if the human eye were sent to him by an optician, he would return it as not accurately adapted to its purpose. We maintain an army of men to patch up the weak defences of the human frame, and to discover means of circumventing innumerable foes whose approach is fatal. If, therefore, we are the expression of a purpose which was conceived in the eternally remote past and occupied

millions of years in achievement, we are forced to conclusions which will hardly commend themselves to those who insist upon postulating that purpose.

Against this negative position it may be argued that, in the absence of an efficient Purpose, either within the heart of nature or imposed from without, the evolution of man is an unexplained mystery. After all, man *has* evolved; he *has* survived as the lord of creation. What, then, has been the efficient cause of his development? To this question the answer that science gives may be summed up in the phrase, "changes of environment." The vicissitudes of plant and animal life throughout the geological record may be traced to the changes in the disposition of land and sea, and to the progressive cooling of the earth's climate, accompanied by alternations of heat and cold over certain areas. Every one of these changes, while destructive of certain forms, was a stimulus to others, and favoured variations in certain directions. It is suggested, for instance, that the Ice Age had a profound influence on the mental evolution of man, forcing him to adapt himself to increasing cold, or to perish. Life started as a simple phenomenon in a complex and variable world, and it gradually became complex through reaction with that world. From the evolutionary standpoint, therefore, man is a "creature of environment," like every other animal and every plant. He is precisely what the world has made him.

CHAPTER VIII

MIND

THE real reason why so many people are unwilling to give up the supernatural theory of life is that they feel compelled to regard the human mind (which is the highest expression of life) as an achievement quite beyond the range of nature. Admitting the continuity of evolution from primitive organisms up to man, the orthodox notion of the human mind as "something different" becomes very much easier if life itself is assumed to be a kind of preliminary miracle. In all these clings to the supernatural, people are concerned mainly about the dignity of the human mind and the human soul. When they plead for the divine origin of life they are not thinking of vermin and vegetable parasites and the grotesque monsters of our own and earlier ages; they are thinking of their own claim to be more than a "mere machine." And when they rebel against the theory that the human mind has evolved as naturally as the world which it contemplates and investigates, they are doing so because they feel that the human mind, with its wonderful aspirations and emotions, deserves to stand upon a pinnacle of immortality far above the ebb and flow of the tides of merely animal life.

This is a perfectly natural feeling, but it arises, like

the dualistic theories of life, from a degraded idea of the potentialities of matter—due, in turn, to imperfect knowledge coloured by human vanity. The feeling is confirmed, moreover, by the marvellous and mysterious nature of Mind. From a lofty philosophical standpoint, of course, there is nothing essentially more mysterious and marvellous about the human mind than about the evolution of an atom. To the philosopher everything—and nothing—is a miracle. But on the ordinary levels of thought we recognise that the human brain is the most complex and highly organised structure in the universe, with faculties which surpass anything else yet discovered.

The “soul” is really the “mind” in its religious aspect. Consequently our notions of the origin and destiny of the soul must depend upon the view we take of the human mind. Our choice lies—as in the case of Life—between a view which shows an impassable gulf between “soul” and “body” and one which suggests that the manifestations of mind—thought, emotion, consciousness, self-consciousness, and so on—are an aspect of the activities of matter. Just as Sir Oliver Lodge appeals to a “not yet understood vivifying principle” to explain the transition from the “non-living” to the “living,” so the average man feels that some God-given power, totally apart from matter, is needed to explain the lifting of the brute up to the stage of a reasoning being, able to look behind him and before him (even to the verge of infinity), capable of reflecting the universe in his thoughts and revealing it in words, hopeful of mastering his environment on earth and of escaping from the law of ultimate death which is inexorable in all other forms of life and

matter. Man, in short, regards himself as the Great Exception, by virtue of a mind or soul which transcends the limitations of matter.

The problem before us, therefore, is to discover whether there is evidence for the evolution of Mind—or, more correctly, of a thinking organism—from a form of matter which admittedly does not show any signs of mind. Put in another form, the question is whether mental evolution has accompanied physical evolution or has been governed by influences which are super-physical or independent of natural processes of organic growth.

There is a temptation, at this point, to plunge into metaphysical speculations about the relation of “mind” to “brain.” The point at issue is very much the same as in the case of Life: it concerns the relations between the “spiritual” and the “material.”

The conception usually expounded in the pulpit has the merit of being very simple—at least on the surface. “Mind” is one of the elements of a personality or soul which inhabits the body during life and continues its spiritual existence somewhere or other after death. The dualism of soul and body is explicit. What the soul really is, and how it can inhabit and control a material organism, is a mystery which is frankly admitted to be a mystery—like the nature of God and of his purposes towards mankind.

It is this conception of a body tenanted by a soul, by the way, which lies at the root of the doctrine of Free Will. The soul is regarded as an independent something which is allowed to express itself through the deeds of the body to which it is attached; and it

is held accountable for these deeds no matter how imperfect the body may be. Moreover, the soul, although it is a supernatural gift and has absolute freedom at all times to choose between good and evil, may be created, may develop, may blossom into more and more beautiful triumphs of spirituality, but can never die.

It is clear that this scheme of things, which borrows from mortality and from immortality indiscriminately, will not bear very strict examination. In any case it does not help us to understand a mind which is non-existent in the embryo, emerges slowly to a kind of twilight in the child, broadens to full day in manhood, grows in variety and intensity through the years of maturity, and finally passes through a twilight of decay into the sunset of death. The prevailing metaphysical theories rather tend away from the "soul-tenancy" idea and towards some definite correlation between mind and body. One school holds that "body" and "soul" are respectively the physical and the psychical aspect of the same fundamental reality. Another school pictures the working of the mind and the changes in the brain substance as parallel processes with no connection of cause and effect between them. Others deny this independent parallelism, and consider that the two series interact, as when an action of the nerves gives rise (as cause brings effect) to a sensation, or when a mental faculty such as the will gives rise (again as cause brings effect) to a movement of the muscles.

The choice that one makes among these theories is almost a matter of taste. At least, it is as difficult (and unprofitable) to discuss as a question of taste. It

belongs to the region of speculation in which the open mind must have the fullest play; and if anybody attempts to dogmatise upon it, his impertinence will be rewarded by a hundred other dogmatists, all contradicting him and each other. The same may be said of most metaphysical questions—a fact which is very consoling to the man who finds them difficult to follow and apparently not worth following. And in the case of Mind it is luckily not necessary, for our purpose at least, to secure unanimity on metaphysical matters before setting out to discover what science has to say to the older orthodox notions of mind and soul. As in the evolution of the universe, of the world, of life, of man in his physical aspects, the vital choice lies between the natural and the supernatural. Was Mind naturally evolved, or was it specially bestowed in its perfection upon man by a creative God?

If we tackle the problem in the light of a brain such as Newton's or Shakespeare's, it seems impossible to get along without the latter solution. The intellectual powers of such men appear to over-arch nature rather than to spring from it. But it is as unsatisfactory to begin at that extreme as it would be to start with another abnormal type of mind—that of the lunatic, who is still regarded by some people as specially gifted by God. The phenomenon of Mind must be treated, like every other phenomenon, from the point of view of growth. Its stages of development must be traced back to their origin; and if the chain of evolution is complete, right back to some form of existence which is admittedly natural, then there will be no necessity to call for creative acts.

One of the most obvious features of the mind is that it does grow. Man is not born into the world a reasoning, self-conscious being. The new-born babe is a kind of vegetative animal, whose existence alternates (or ought to) between drinking and sleeping, and whose consciousness, if any, must be as vague as that of a blind kitten. Its mental faculties develop slowly, under the stimulus of sense-impressions—sight, hearing, taste, smell, and touch. The process is so gradual that no one can place his finger at certain points and say, Here sub-consciousness became consciousness, and here consciousness became self-consciousness. Some individuals may, perhaps, be able to locate the latter step in their own memories, as in one case where an unmerited punishment gave a child a sudden perception of its existence as a personality among other personalities.

As a rule, however, no such crisis marks the rise of self-consciousness. Theologians, as already mentioned, used to be very puzzled to fix the exact time at which the soul was planted in the body. Was it at the moment of conception, or of birth, or later? The impossibility of answering this question, when we have to deal with a being which shows an uninterrupted growth from an amoeba-like animal up to adult man, is an indication that the theory of an independent soul raises more difficulties than it removes.

The same kind of trouble arises if we associate the soul with the power of reasoning. In its first stages human life is purely instinctive; and reason emerges slowly and tentatively above a mass of instincts from which it never really escapes. The study of "mind in animals" shows that we can no longer follow the

too-convenient division of animals into reasoning beings (men) and creatures of instinct. There is no such hard-and-fast line. Man is nine-tenths instinct; and the higher animals have the glimmerings of an elementary power of reasoning, or, at least, they possess the faculties which have only to be developed a stage or two further to be recognised as undoubted evidences of reason. The perpetual controversy about "reason" and "instinct" in animals shows that we are not dealing with entities in water-tight compartments, but with activities which have a common basis in a nerve and brain structure which has evolved to a higher pitch in man than in the animal.

The key to the problem of mind is, in short, the fact that the character of the mental life displayed by any organism depends upon the complexity and arrangement of its nerve structure. We may hesitate to call that structure a machine, because our ideas of mechanism are associated with inorganic structures. But it may be justifiably described as an organic mechanism, because its action, under given conditions, can be predicted. That is to say, every element in the nerve and brain system of an animal has its function to perform; and it performs that function when the appropriate stimulus is given. Psychical activities belong to the world of cause and effect, just as much as physical activities; and there is no evidence for any unknown quantity intervening to make them behave otherwise than their inherent qualities would lead us to expect.

The links between inorganic mechanism and organic mechanism are, in fact, so closely knit that some authorities use the word "consciousness" in connec-

tion with matter itself. Starting with self-consciousness, they trace how it arose from consciousness; then they follow the various grades of consciousness from the highest organism down to the lowest. Assuming the origin of life to be purely natural, they go still further, and ascribe to the matter out of which living things are built some form of sub-consciousness. Thus the molecules of salt, in building themselves into crystals, act under what may be described as the germ of deliberate choice. But to use the word "consciousness" in relation to the affinities of molecules is to put a severe strain on language. If we are talking on anything but a metaphysical plane, we must give the word its every-day meaning, and treat consciousness as a mental condition which emerges at a certain stage in the history of living things, just as it appears at a certain stage in the development of each individual human child.

Under what conditions, then, does consciousness appear? Whether we study the evolution of the individual animal or of the whole animal system, we find it associated with a fairly high form of brain. It is to the brain, therefore, and its associated system of nerves, that we have to look for instruction on the evolution of mind. In the most primitive organisms there is not even anything that can be called a nerve. Their structure is homogeneous, in the sense that any portion, if detached, is capable of developing into a complete animal, moving, digesting, and reproducing. Nerves begin to appear in an elementary form when a certain division of labour is arranged among groups of cells forming organisms. The first step in this process is taken when the inner cells specialise on

digestion and reproduction, and the outer cells on locomotion and sensitiveness. As the function of the sensitive cells is to assist the organism in detecting the presence of food, natural selection will favour those organisms in which these sensitive cells are well developed, in association with cells which carry the organisms towards the food and enable them to digest it. Although we use the phrase, "detecting the presence of food," we do not imply the existence of consciousness. The flower which turns towards the sunlight, or pushes its roots downward in the soil, "detects the presence of food" in precisely the same way. Yet we are content to treat a plant as an unconscious vital mechanism.

The next step in the division of labour takes place among the sensitive cells, some of which respond specially to light, others to odour, others to the pull of gravitation, and so on. These different sense-specialists are linked to the organs of locomotion and other parts of the organism by rows of sensitive cells, which thus form a rudimentary nervous system; and the appearance of a central cluster of nerve-cells connected with them all (like a telephone exchange for a number of branching lines) marks the beginning of a brain.

At this stage the nerve mechanism is at the simple "reflex action" stage. When a light-stimulus falls on a nerve sensitive to light, the message is transmitted to the nerve centre, which is thus stimulated to send a message along the nerve or nerves controlling the means of locomotion, leading the animal to move towards the light. The precise nature of the "message" is no better known than the precise nature of

a current of electricity (to which it is in some respects allied); but this action and reaction form the sketch-plan of the nerve machine, for the highest as well as the lowest animals. And it is astonishing to note what a variety of apparently mysterious activities can be carried on by an organism with the most elementary system of "nerves." Consider, for instance, the "worms" described by Dr. Keeble in his delightful volume on *Plant-Animals*. These organisms exist in colonies on certain beaches between high and low tides; they are visible in patches where the tide is low, but disappear under the sand when the tide begins to rise; they lay their eggs at definite tidal periods; and they have other habits which, when fully described, would in themselves suggest a very complex organisation, if not consciousness and reason as well. If a cupful of sand containing these organisms is carried ashore, the organisms in it will rise to the surface of the sand as the tide falls, and descend again when the tide turns. Nevertheless, the complex rhythms of their existence can be explained by simple responses to light, gravity, and vibration. Their extraordinary habits are the resultant of periodic variations in illumination and in the movement of the tides. Yet, "even among worms, they occupy a lowly place."

Such instances of very primitive organisms enjoying a very elaborate life, in which forethought seems at first sight to play a large part, are extremely valuable in checking the tendency to attribute reason or intelligence, or even "something supernatural," to many of the not-easily-explained actions of the higher animals. The worms described by Dr. Keeble have nothing in the way of a brain; their organisation is immeasurably

less intricate and delicate than that of a fish or a reptile, to say nothing of a bird or a mammal. And when we discover what involved harmonies Nature can produce from the simple worm-instrument—using light, gravity, and the movement of the tides—we are ready to appreciate Nature's ability to produce the most intricate symphonies from highly-developed instruments, capable of response to a much wider range of influences. The secret of life, even of the highest life, lies in this response; it is simply the reaction of an organism to the stimulus of its environment. Moreover, that reaction may be very complex and "purposive" without being accompanied by consciousness.

The small part which consciousness plays in the life of the human individual is very significant. We are accustomed to think of the mind as an entity which controls the affairs of the body as a manager controls a business organisation—with complete knowledge of what goes on in every department, and with autocratic control over the behaviour of every member. But a very little reflection will show that the mind is far from being an absolute monarch. There are a hundred processes going on within us of which we are not conscious, and over which we have only the most remote control—processes of digestion and assimilation, processes of secretion, movements of the blood and the lymph, the extraordinary action of micro-organisms which swarm in the blood and attack poisonous intruders, and so on. There are other processes, such as the beating of the heart, of which we may be conscious, but which we cannot check. Others, again, such as the movement of the lungs, we may control within certain limits.

The brain, in fact, has only the most imperfect acquaintance with the way in which the other nine-tenths of the body is living. Like a constitutional monarch, much of its activity consists in registering the decrees of an independent democracy, many of whose peculiarities it knows only by hearsay. And it is most important to note that the unconscious actions of this body-democracy are governed by nerve mechanism. The flow of gastric juices when food enters the stomach, the elaborate co-ordinations of movement in the circulation of the blood and in breathing—these and many other “purposive” actions are responses to nerve stimulus. Yet they go on just as well when we are asleep as when we are awake. In that sense they are automatic.

The relation of conscious to unconscious nerve action becomes clearer when we trace the evolution of the brain. Here we find that the human brain is closely allied to the animal brain; it is, in short, the animal brain developed a stage or two beyond the level of the highest animals. In all vertebrates the central nerve mechanism makes its appearance in the same way. It begins with a cylindrical tube in the backbone position; then the forward end expands into a knob, and the remainder becomes the spinal cord; this knob divides crossways into three, four, and finally five sections, the foremost of which—the cerebrum—is of the greatest importance, because it is entitled to be regarded as the “organ of mind.” If the cerebrum of an animal be removed, the animal will continue to live—that is to say, to digest food, to breathe, to circulate its blood—but consciousness and the power of making voluntary movements disappear. The greater the intelligence of

the animal, the larger and more intricate in structure does the cerebrum become. The most vital part of it is the grey covering, or cortex, since it alone is concerned with consciousness and with the faculty of thought. It forms, in the human brain, a layer not more than one-sixth of an inch in thickness, composed of about one million five hundred thousand cells arranged in most intricate convolutions, each cell being of the most complex character, not only in itself, but in the molecules composing it. The human cortex is, indeed, far and away the most intricate of animal structures.

It is, however, only in its degree of intricacy that the human cortex differs from the cortex of the higher animals. By virtue of that greater intricacy, man enjoys a higher psychic life than the brute; he is able to classify his sense-impressions, to perceive relations, to form abstract ideas, to weave the past and the future into the texture of consciousness, and to benefit by experience, in a manner which is beyond the highest animal. But there is a complete agreement in the structure and development of the machinery of consciousness in man and the animals. We are one with creation both in the spirit and in the body. All the evidence goes to show that just as an animal loses the power of sensation and will when its cerebrum is removed, so the soul-life of man depends upon the activity of special brain-cells which are linked together in a living structure whose ground-plan was laid when the lower animals were evolved.

It is this linking together or co-ordination of the brain-cells which throws light upon the puzzle of individuality. Microscopical examination of the cortex

shows an infinity of fibrils connecting the cells together ; the lower portions of the brain and nervous system show an orderly tangle of connecting links which achieve reciprocity of action between sense-impressions and movements. In the lower animals the system of intercommunication is simple ; in the higher animals it becomes increasingly complex. As we look at an animal we recognise the resulting unity as an external fact ; self-consciousness gives us the sense-impression of ourself as an internal fact. Moreover, our individuality grows and changes as the brain-structure grows and changes, registering the results of experience in new connecting links and new intricacies of structure. We are the same, and yet not the same, as we rise from infancy to youth, from youth to maturity, and fall from maturity to old age. Our *ego*, which appears to us (especially when theologically inspired) as an entity capable of existence apart from the brain, is, from this point of view, an abstraction from a multitude of co-ordinated impressions.

It is the fashion to condemn this view of the human mind as "materialism." But the use of this term in an opprobrious sense is an obvious relic of the old theory that matter was something "gross." It is open to anyone to take an idealistic view of matter ; and not the least important service which science has rendered is its revelation of the marvellous potentialities of what was once despised as the prison of the spirit. To regard mental activities as the highest known expression of the activities of matter is not to degrade the mind, but to do tardy justice to the virtues of the fabric from which we are composed.

CHAPTER IX

MORALITY

AMONG the witnesses for the Supernatural the conscience of man has always taken a leading place. Indeed, it is possible to imagine an orthodox inquirer gradually giving up his belief in the supernatural origin of the universe, of physical man, and even of the mind of man, yet holding fast to the conviction that conscience is a faculty which is essentially divine. It seems to stand apart from the things of this world, as a church spire, alien in architecture and in suggestion, rises above the selfish clamour of the market place and points to a remote ideal. It is the "still small voice" which echoes in our hearts the thunders which burst on Mount Sinai when Jehovah proclaimed his Law. It is a lamp which an angel's torch has lit in the native darkness of every man's soul. It is something mysterious, infallible, indestructible—something which never fails to uplift us when we do what is "right," and to crush us with remorse when we do what is "wrong."

As soon, however, as we begin to analyse the matter we find that this notion of a supernatural touchstone is not quite so secure as it seemed at first sight. There are men and women who are very deficient in moral sense; some, in fact, appear to have no conscience at all. In

young children the moral sense is, to put it mildly, primitive; it needs to be trained by precept, example, and experience, before it can become really effective in controlling conduct. Moreover, it is notorious that conscience approves in one country, or at one stage in history, what it disapproves in another country, or at another stage. Circumstances, that is to say, alter conscience. If conscience were a divine faculty, there would never be any doubt about what is right or wrong; but even the Churches are unable to agree about the correct attitude towards such an ancient and fundamental problem as Divorce. In attempting to solve that and many other problems they go quite beyond the faculty of conscience, and appeal to scriptural texts and to other standards which would be superfluous if the still small voice were the authentic messenger of God.

Another fact which points the way towards the real nature of conscience is that some animals display the same faculty. Domesticated dogs often possess a moral sense which is more acute, within its limits, than that of their masters. And our schoolbooks bade us look to wild animals, as well as to tame, for the virtues of kindness, honour, and constancy which we were called upon to imitate. The example was not considered any less effective because animals were denied free-will or the hope of immortality, although some people do regard the moral sense of animals as a virtual passport to Paradise. But the moralists who went to birds and beasts for their examples and their arguments did not carry the matter quite so far towards its logical conclusion. Their view was that animals merely provided object-lessons, just as inanimate nature does to the

discerning mind. The idea of continuity between the animal conscience and the human conscience—the idea of a common origin and a common purpose—did not become clear until the development of the moral sense was understood to be within the scope of natural evolution.

The essence of morality is sympathy—that power which enables us to subordinate our own desires to the feelings and the claims of others. Indeed, it may be said that the essence of Christianity (apart from its dogmatic theological elements) is sympathy, deepened and expanded until it embraces all mankind, including our enemies. If we consider these lofty and highly-developed forms of sympathy by themselves, they seem just as difficult to explain as a full-grown oak would be if we knew nothing of the acorn or the sapling. Moreover, they seem so “contrary to nature” that we are apparently driven to suggest a supernatural sanction for them. Altruism is, we observe, violently opposed to egoism—as Ormuzd, the spirit of good, is opposed to Ahriman, the spirit of evil, in the ancient religion of Persia. The natural man is full of Original Sin, from which he can be saved only by being “born again” by supernatural means. In a word, the same dualism of thought which we find in the separation of “soul” and “body” is shown in the common conception of man as a carnal being whose selfishness and rebelliousness are held in check by a moral sense which belongs to the spiritual and the eternal.

Nevertheless, if we trace the moral instinct back to its source, we find that it is an essential part of man’s nature. We find, in fact, that it arises from the

struggle for existence—the very struggle against which morality is so often supposed to be a God-inspired appeal.

In tracing the evolution of mind we gave a rough idea of how the nervous systems of animals had become more complex and more sensitive by almost imperceptible steps. No long argument is needed to convince anyone that each upward step in nerve organisation gives an animal a better chance in the struggle for existence. But there is one condition of this upward process which is not so clear on the surface. A complex brain takes longer to build than a simple brain; and unless the animal with such a brain is protected until its keener faculties are in working order it is fairly certain to fall a victim, during its growth, to some animal which, though less gifted, reaches maturity quicker. This all-important protection is afforded by the mother of the animal, and in some cases by the father as well. Among the higher animals the young are sheltered and trained by the parents until they are able to seek food, to fight, to elude pursuit, and generally to fend for themselves.

Here we touch the secret of parental care, which is the basis of self-sacrifice, of conjugal affection, of family love, and ultimately of social sympathy and the sense of universal brotherhood.

Looking at the matter more closely, it will be seen that in a world where organisms live upon other organisms there are only two ways by which a species can maintain its existence. It must either breed so freely that an enormous destruction of the young may still permit the survival of sufficient numbers to continue the race; or it must become more skilful in self-

preservation than its enemies. Thus we find, as we rise in the animal scale, a decrease in fertility and an increase in brain power, accompanied by greater protection to the limited number of offspring produced. A fish, for instance, deposits hundreds of thousands of spawn, which it leaves quite unprotected, and upon which other fish voraciously feed. If a single one survives this terrific destruction, the species will be continued. And if we imagine some members of the species to vary in a direction which gives the adult some advantage in the struggle, it is plain that this variation in itself cannot benefit the next generation, because the spawn of this better type are just as helpless as the spawn of the ordinary type. The most direct chance of perpetuating an uplift is for the parents to guard the spawn against intruders. Some fish do this by hatching eggs within the egg-duct of the mother. With such an arrangement twenty eggs are as good as five million in the cases where even this elementary form of parental care is not exercised.

In cold-blooded animals, however, the protection of the young ceases when the egg is hatched. The warm-blooded types—notably the birds and the mammals—provide us with examples of protection extending to various periods beyond the time when the offspring begin a separate life. As these periods grow longer, the parents have less time and energy for the processes of breeding, while the necessity for fertility diminishes according to the care taken to bring each young animal to an effective maturity. An ape with one baby each year will do as well as a fish with a million spawn. Therefore the aristocracy of the animal world have small families, upon which they bestow much greater

care over longer periods than is the rule among the lower orders.

The various stages in this upward progress are admirably traced by Mr. Sutherland in his *Origin and Growth of the Moral Instinct*. We may pick up the story with the nearest cousins to the human race—the apes. There the association of the embryo with the mother is closer, the period of growth in the womb is longer, and the arrangements for suckling and subsequent parental care are more efficient than in the marsupials and other animals which preceded them in the history of evolution. When we step over the boundary line to the human species we meet with conditions which are merely an extension of those existing among the apes. The protection of the young in the womb is slightly better, the usual time of suckling is longer, and the devotion of the parents is continued for a longer period than among the highest animals. But there is no break in the chain of progress.

It would not be quite sound, however, to attribute the growth of conscience exclusively to parental love. Animals have another means of safeguarding their offspring. They may form societies for mutual existence and defence. Wild horses form herds; bees and ants build hives; birds migrate in flocks. In all the upper ranks of animal life we find distinct signs of sociability—the power of united action for the common good.

This power is of great importance in the struggle for existence. Huxley asserted that “from the point of view of the moralist, the animal world is on about the same level as a gladiator’s show.” Even among primitive men “life was a continuous free fight, and beyond the limited and temporary relations of the

family, the Hobbesian war of each against all was the normal state of existence." In taking this view of Nature red in tooth and claw, Huxley omitted a vital aspect; and his omission has been the father of countless misunderstandings. He implied that the moral element in the world is something apart from Nature, cutting athwart the process of the survival of the fittest. Nothing was easier than to say that this "something apart" was the hand of God bringing the element of sacrifice and mutual aid to mitigate the rigour of the gladiator's show. Over and over again one finds Huxley quoted in support of the theory that morality has a supernatural origin. Over and over again one finds the "struggle for existence" contrasted with the ethical law.

The animal world, however, provides innumerable examples of sympathetic aid and sociability uniting for the survival of the species. Co-operation is the means which the weaker animals adopt to sustain existence. The lion and the tiger are stronger and more cunning than the horse, but no beast of prey dares to attack a united herd. Animals which depend for their safety in rapid flight from their enemies obey the signals which their sentinels give to the herd. Just as the animal family gives us a preliminary picture of the human family, so the animal society provides a primitive example of the highly-developed community of human beings. And it is clear that the more capable any species happened to be in practising the characteristic moral habit of mutual aid, the greater its chance of breeding and maintaining its kind.¹

¹ This aspect of the struggle for existence is developed with convincing skill by Prince Kropotkin in *Mutual Aid*.

The vital point to be observed is that, in the evolution of animals, the struggle for existence has tended to the ultimate survival of what we describe as moral types. In this matter, as in so many others, the human species is clearly identified with its animal relations. No supernatural impulse, no "categorical imperative," is needed to explain the gradual advance towards ethical perfection shown by savage, barbarian, semi-civilised, and civilised man.

A natural and indeed inevitable step from parental devotion is towards a sympathetic relation between parents. Organisms which respond to the cries, the weaknesses, and the tender appeals of offspring are already fitted to feel a more or less lasting pleasure in the companionship of their partners. Natural selection confirms this tendency through the survival of those children who have had the benefit of care from both their parents. Consequently we find that even among savages the general drift of habit is towards monogamy. The more closely the family is united by reciprocal affection, the better is the training of the children and the higher their chance of success in life.

Intense as it may be, however, family feeling is obviously narrow in its range. Morality in its broader sense does not begin to develop until families unite into groups. The first social groups appear to have been a development from the family, in a manner of which the old Scottish clans are an example—though a rather advanced one. Anthropologists are still a little puzzled about the exact mode of growth, but the main fact for our present argument is clear enough. Whatever the precise means by which the family rose to the clan, the clan to the tribe, and the tribe to

the nation, each upward step represented a widening of sympathy and an increase in social organisation which would be a definite gain in the struggle for existence. It would also necessitate the growth of a code of behaviour regulating the relations between individuals and between groups. The object of this code was to secure coherence in the group, so that the members would act together effectively in attack and defence, in their industrial pursuits, and in the training of the young. Obviously, this coherence would be more readily obtained, and on a wider scale, among people with broader and more sensitive sympathies. "The law of sympathy has therefore been," as Mr. Sutherland remarks, "the law of progress."

It must be observed, however, that this social sympathy, although a natural accompaniment of parental and family sympathy, is a slow growth, and does not equal the earlier forms of sympathy in depth and intensity. Frequently there is a clash between the wider (social) and the more deep-rooted (parental) sympathies; and in such cases the paramount interest of the group demands that the social sympathies shall be deliberately encouraged, if not enforced. As a result we find that the savage tribes and barbaric nations which have survived possess a very rigid and often very complex code of conduct, expressed in customs and laws which are enforced with relentless severity and bolstered by taboos, by the threatened wrath of spirits, and by many strange religious sanctions. For instance, the elaborate code attributed to Moses and adopted for centuries by the Jews was not accepted because it was recognised, upon examination, to contain many useful hygienic and social regula-

tions. It was accepted because it was prefaced by the terrific claim: "Thus saith the Lord." Moses was regarded as a divine law-giver; and his ordinances were respected because they had behind them the thunders of Jehovah.

We need not look much further than this for the origin of conscience—that internal mentor whose voice seems at first so mysterious. Those races which showed the deepest social sympathy and the highest respect for the moral law, which enforced that law most vigorously with religious sanctions, the force of public opinion, social approbation and reprobation, and with systematic punishment, were the races which survived. If we imagine the effect of generations of such regard for social ordinances, accompanied by increasing periods of education of the young in what the race recognised as right conduct, it is not difficult to understand the growth of a faculty which responded pleasurably to good behaviour and with pain to bad behaviour. Public opinion (using the words in the broadest sense) is so strong that many individuals will obey it and even admire it, although their natural inclinations are in revolt against it. But whether the submission is merely due to prudence or is inspired by a willing respect for the interests of the community, the tendency is to eliminate those individuals who do not submit and to encourage those who do submit.

Everything leads, therefore, to the survival of those whose conscience is strong and sensitive. The conception of duty is not inherent; it is a product of education and environment, acting upon an organism which is, by descent reaching back to its animal ancestors, amenable to its influence. A European child, brought up in

the isolation of a desert land, would not know the meaning of morality; and he would acquire it only by entering into social life. Moreover, his conception of it would not be that of his parents, but that of the people with whom he came into contact.

In the light of such facts we can readily understand the variations in conscience among nations and among individuals in each nation. We can also understand how the mind of man became familiar with the idea of a supernatural, or at least an extra-natural, sanction for morality. His mind has, indeed, become so accustomed to belief in such a sanction that the notion of morality being independent of it (and healthier for its independence) can hardly be grasped by many people. Yet, when we consider the matter from the outside, which of us really believes that a sanction is either necessary or desirable? Which of us feels that honesty is made more acceptable by being described as "the best policy," that murder is rendered more abominable by Jehovah's condemnation, that conjugal fidelity becomes more virtuous as a result of the Church's adoption of it as a cardinal principle, or that kindness acquires a new beauty because we are ordered to love one another? Deep down in our hearts there is a feeling that people who are moral because God established certain lines of conduct as moral, and flanked them with promises of happiness and threats of punishment, are only superficially moral. We despise them as we despise men who obey the civil law merely because they are afraid of its penalties. If moral action is not spontaneous and free from either the hope of reward or the fear of retribution, we despise it.

On the other hand, we feel that morality should be imposed upon *other people* with 'greater force than is provided by its intrinsic weight. Civil justice needs, we observe, the strong arm of the law to make itself effective. The non-legal virtues (such as chastity, truthfulness, kindness, benevolence) likewise need, we may argue, to be strengthened by an external authority. This is one justification, and a very powerful one, for the continuance of the Church as an active guardian of morality, armed with supernatural power. It is also one reason why people fear that the declining authority of the Church will tend to an increase in moral laxity.

Now, there is little doubt that many a savage holds his murderous hand through fear of ghostly vengeance; that many an ancient Jew conformed more readily to the beneficial life of the tribe because he believed that God had written the Ten Commandments on tablets of stone; and also that many a Christian has restrained certain impulses because he preferred an eternity of bliss to everlasting punishment. But no one who worships morality in its essential beauty can find much satisfaction in this kind of conquest. And it is also true (as we know almost *ad nauseam*) that the Church has been associated with the bloodiest wars in history and with the most abominable persecution, both petty and great. Still more important is the truth that the Church has formally offered eternal salvation from sin in return for an *act of belief*. By doing so it separated "faith" and "works" in a manner which has depreciated the value of morality (essentially a question of works) and made a supreme virtue out of a mere act of mental acquiescence.

But most important of all is the fact that the recent

period of decline in Church authority has been coincident with an increase in the sensitiveness of the public conscience. Never before have we heard so much, from within the Churches themselves, about the indifference of the world to their message. The recent movements towards "inter-denominationalism" and the union of Christian sects are admittedly a union of forces against the tendency of the public to drift away. The efforts of clergymen to step outside their former limits, by taking up political work and sharing in social reform by legislation, are additional signs of the cleavage between the pulpit and the world. And in our earlier chapters we discussed the vagueness and contradictoriness of the current pulpit teaching. But never before has the public been more concerned to preserve peace and honour among nations, to ensure justice between classes and among individuals, to modify the harshness of social inequalities, to prevent and alleviate suffering of all kinds, to increase knowledge and improve education, to promote tolerance and co-operation, and in general to reduce the confusion, waste, and misery of life. We may be a long way from achieving these ends, but we are nearer than we ever were before; and there is a far more widespread determination to find and follow the true law of progress. But it is not being sought in visions of another world. It is being sought in knowledge, in the study of cause and effect, in facing and understanding the realities of existence.

The modern standpoint was very well expressed by the late W. K. Clifford: "The first principle of natural ethics is the sole and supreme allegiance of conscience to the community." This allegiance, however, is not

the blind and unquestioning allegiance which was required by the Ten Commandments. It is an intelligent allegiance, because it demands a study of what the highest interests of the community really are. Certain principles of conduct have already been extracted from the age-long experience of the race; but their application to particular conditions still demands an effort of thought. Morality continues to evolve, and each generation must solve its moral problems in its own way. But amid this continual change there is one thing which remains rigid—the operation of the law of cause and effect.

Supernatural religion used to regard certain acts as sinful in themselves, and as capable of being wiped out of the record of life by repentance or by sacrifice, personal or vicarious. The lesson of evolution is that no such blotting out of sins is possible. If an act is sinful, it is sinful because of its effects, both upon the sinner and upon those sinned against; and those effects can be modified, if at all, only by compensating acts. In this sense the laws of natural ethics are closer to the absolute than the ethics embodied in the creeds or supported by a “categorical imperative.” For those who declare that man must be forced into being moral, what could be more acceptable than the terrific thought that every act is a link in a chain which will stretch to the ultimate limits of human history?

The distinction between the old morality and the new, between the supernatural and the natural, may be further illustrated by pointing out that, while the former offered *rewards* for right conduct, the latter offers *reasons*. But it must not be inferred that natural morality is an affair of the intellect alone. It is based

on sympathy, and it appeals to sympathy. Its essential usefulness is coloured with beauty.

The first houses which man built were mere crude shelters; then they acquired stability and symmetry, which are not only useful, but are also the foundation of the æsthetic pleasure which a well-designed building gives to the educated eye. So we reach the stage at which men pursue and admire beauty in architecture without immediate regard for the purpose of the building or for the physical laws which underlie and determine its beauty. In a similar manner, the first moral laws were evolved as a protection for the community; in the course of evolution they became systematic and codified on a basis of custom; and at a later stage the mind of man, turning inward upon itself and upon experience, brought its æsthetic faculty to bear so as to perceive the beauty as well as the usefulness of morality. The beauty of holiness is simply morality touched with emotion. But, although it is an abstract idea, it is not a mere abstraction; its origin lies in the laws of good and evil which have been wrought from the daily lives of men and women.

CHAPTER X

THEOLOGY

It is somewhat curious that the idea of evolution is more generally accepted in connection with religion itself than with any other aspect of man, save the purely physical. People who are doubtful about the evolution of life, of conscience, or of mind, are prepared to admit the evolution of religion, at least in its outer aspects of custom, ritual, and dogma. That is to say, they do not deny the natural and continuous growth of our ideas about the supernatural.

This is rather an anomaly, but it is easily explained. It has arisen out of the prominence given during the concluding years of last century to Biblical criticism. The persistent exposure by Freethinkers of discrepancies and crudities in the Bible narratives forced the attention of scholars and divines upon the real origin of these narratives, and so made it clear that the Bible was not a complete and coherent exposition of divinity, but a collection of "sacred books," varying greatly in date and in sanctity. From this same study there emerged a fairly clear picture of development in the religious ideas of the Jews. It was seen that the earlier records touched the lower levels of polytheism, and that the later records touched the upper levels of monotheism. Thus the notion of a single revelation

gave way before the notion of "Progressive Revelation," in which man was gradually prepared for a higher, and yet higher, conception of the divine.

Once this notion took root, it was logically impossible to limit it to the period between the ancient Jews and the early Christians. It penetrated down to the ultimate sources of religion, and rose to the latest manifestations of the religious ideal; and, although many people continued to believe that this progressive revelation was supernaturally ordained and controlled, the recognition that it had been progressive was a step of vital importance towards an understanding of the true history of religion.

For the true history of religion teaches that religion arose naturally and grew naturally. All our ideas of the supernatural are rooted in the natural. There is not a sentiment, a hope, a belief, a dogma, or a custom associated with religion which cannot be explained by ordinary scientific means. In this sense there was no "revelation" whatever about Christianity or any other form of supernatural religion—nothing imparted from unknown sources, nothing whispered by mysterious voices, nothing produced save what man himself conceived in his terror or his ecstasy, his ignorance or his striving after knowledge. It is always man's *own* shadow which has been cast upon the darkness of the unknown.

The story of religion is very lengthy and very complex, including as it does the explanation of a thousand myths, taboos, fetiches, rites, customs, and institutions. But if we search among these diverse manifestations for some fundamental principle, some original and per-

sistent *motive*, we discover it in fear. Two centuries ago Hobbes wrote that "the feare of things invisible is the naturall Seed of Religion"; and the scientific study of religion bears out this shrewd analysis. As Mr. Clodd, in quoting this opinion, remarked: "In the degree that anything is unknown, it remains a source of dread, and therefore of evil, since from 'feare of the invisible' sprang the feelings of inferiority, helplessness, and dependence which man's surroundings quicken, and which are the raw material of theologies and rituals." Primitive man was surrounded by the unknown. His mind was slowly emerging from the animal stage to that of regarding the world around him with a look of interrogation. He was encompassed by dangers against which he had only the feeblest protection; his sleep was haunted by dreams made vivid by hunger and exposure; he had to face tempest, the appalling menace of thunder, the silent blows of sickness, and the cold terrors of darkness. When we try to imagine his existence we reach the conviction that he must have been continually on the verge of panic.

Thus the first shadowy conception which he got of the world must have been that it was full of evil. We see this conception somewhat more developed in the savage notions of powers or spirits haunting forests, glades, rocks, and mountains, ready to strike at mankind and demanding propitiation. There is still some doubt as to the precise manner in which men were first led to believe in human spirits, and also to attribute a like invisible essence to trees and stones and various natural things, animate and inanimate. But there is a general agreement that the belief was the outcome of dreams, and of the tendency—still shown by children

and savages—to regard anything moving, or capable of movement, as “living.” The savage gives the simplest and most obvious explanation of his dreams—that “something” leaves his body, travels, fights, meets men who are still living or who are long dead; and, in a word, lives a life which is a reflection of his waking life. It is a natural inference that this same something, which returns to the body of a sleeper before he awakes, leaves it altogether when he dies. And it was also a natural inference to make the “living” things of the non-human world the dwelling-places of similar spirits.

Here, then, we have the simple germ of the ideas of the soul and of immortality. Here, also, we have the germ of the idea of God. The earliest altar was a tomb, on which the relations of the deceased placed food and weapons to assist the spirit on its way to the shadow-world. Rites were performed to drive the spirit away and prevent it returning to harass the survivors, who went in fear of it. The more powerful the deceased was when alive, the more lavish would be the gifts and the more elaborate and long-continued the efforts to keep his spirit at a distance. Thus the dead became deified, first as beings to be wholly feared, and later, when the same process was applied to men who had been loved in life, as beings to be regarded with reverence rather than with terror.

Out of this worship of the dead, and this tendency to see spirits everywhere, primitive man made many gods. There were earth-gods, tree-gods, animal-gods, stone-gods, and water-gods, as well as ancestral gods. And all these gods were made in the image of man. They constituted his interpretation of nature, for the

time being ; they were symbols of the unknown powers with which he was surrounded, and before which he stood helpless and trembling. From the ancestral god there rose, by a natural growth, the tribal god ; and from the local or wandering spirits the crowd of "demons" and "devils" which were familiar (until lately) in Christian theology.

The most familiar example of a tribal god is the Jehovah of the early parts of the Old Testament. Jehovah was the God of Israel, and he demanded that the Israelites should worship no other gods. By slow degrees this conception of a jealous and revengeful God, who was ready to lead the tribe in battle, and whose wrath could be appeased by burnt-offerings and the sacrifice of blood, gave place to the idea of a single supreme God, creator of heaven and earth, the Father of all humanity. This is the stage at which the God-idea appears in Christian theology ; but it was far from being a pure monotheism. The God-head was triune—Father, Son, and Holy Ghost—in a manner common to many religions. Further, the evilly-disposed gods of primitive religion had survived in Satan, the Spirit of Evil, who had the status of a god, inasmuch as the Spirit of Good permitted him, and his attendant demons, to exist.

Thanks to the belief that the Bible was literally inspired, this anthropomorphic God-idea survived beyond the time when the mind of civilised man, left free to criticise, would have recognised its crudity and rejected it. Towards the end of last century the God-idea became refined. It gradually lost the more pronounced human features ; it became etherealised from a man writ large to a Spirit infinite in knowledge and in

power, who had made the universe and man, who loved man, chastening him with sorrow, showing him the hand of God in miracles and in disasters, offering him the alternative of everlasting bliss or everlasting pain. The Jehovah of the ancient Jews had become the Providence of the latter-day Christian.

Even then, however, an element of fear lay at the kernel of the God-idea. Vengeance was still the prerogative of the Lord; and the first duty of parents was to instil into the minds of their children the fear of God. So long as the belief in Hell persisted, the power of making the sinner tremble was the strongest weapon of the preacher.

The present-day Christian, however, is ashamed of hell-fire, and is indignant when it is mentioned as an integral part of the creed of Christianity. Satan has become a pale anachronism, and the fear of God has been sublimated into a form of reverential awe. At the same time God has ceased to be a "Special Providence," and has withdrawn to the vague distance of a "General Providence." That is to say, he does not continually interfere with the affairs of the individual. Nature, and the laws of Nature, are the expression of his will; and "the uniformity of Nature" is translated by the Christian as the expression of a God without variability or shadow of turning.

From this point it is but a short step to the identification of God with the unknown energy which is immanent in nature. This is the logical summit of Theism, and it is practically the same position as that of so-called Atheism. Such difference as there may be is a difference of interpretation. Theism assumes that this energy has some purpose in regard to man, either

in the present world or the next ; it credits the energy with consciousness, forethought, and other elements of human personality. But this assumption is an obvious relic of the anthropomorphic ideas of God. It shows that God, however etherealised, is still made in man's own image. To say that God is infinite, eternal, and inscrutable, and yet to declare that God must act in a certain way because *we* cannot conceive of him (or it) acting otherwise, is merely to prove how closely our religious ideas are still linked with those of the savage who gave a conscious spirit to everything that moved or thwarted him.

The attitude of science towards the God-idea is quite simple. It is one of pure agnosticism, so far as the constitution or the ultimate purpose of the Reality behind things or the energy within things is concerned. Man may speculate as he pleases about this Reality and this Energy ; but his speculations have no validity in the world of knowledge, because they belong to regions where knowledge has no foothold. Science takes up this attitude with the greater confidence because it has proved that all those ideas which theologians imagined to be glimpses under the veil of mystery are merely the visions of human ignorance and fear.

Regarded from another point of view, the evolution of religion has been an advance from the supernatural to the natural. The savage, whose knowledge of the Seen was minute, lived in the constant presence of the Unseen ; we, whose knowledge of the Seen is comparatively great, are no longer haunted by the terrors of the Unseen. As our knowledge has widened

and become better organised, the supernatural has been driven further and further away, until it has faded into a vague mark of interrogation beyond the limits of the known. And with it has departed that fear which for so many generations benumbed the brain and paralysed the will of man. When the debt which humanity owes to science comes to be reckoned, the greatest part of it will be found to be the deliverance from fear. We may stand humbly enough before the ultimate mystery of existence, but we do not tremble. With our own intelligence, itself wrought out of the fabric of the world, we have been able to trace the story of that world; we have drawn in clear outline the growth of life, of man's body, of man's soul, of human institutions. We—the highest product of evolution—have become conscious of evolution; and by reading the past we are able to foretell the future, or at least to direct our energies so that the progress of man will be accelerated. In killing fear we have given birth to hope—not the hope of escape to another world, but the hope that man, through knowledge, will become the master of his destiny on earth.

CHAPTER XI

THE MAKING OF A RELIGION

So accustomed are we to a religion pivoted upon "the other world" that it is not easy for us to conceive a religion in which immortality has ceased to be a primary certainty and has become nothing better than a remote possibility. But it is undeniable that the idea of the next world has, along with the idea of God, become very much more vague within the Church itself. "Hell" has as good as disappeared altogether; and "Heaven" has been transformed from an adjacent region, in which souls would be engaged in eternal hosannas, to a mere condition of spiritual existence, quite undefinable as to place and purpose. In fact, the modern Christian clings to little more than the bare hope of survival after death. He does not believe that "death ends all"; but as to what comes after death his conception is as dim as a forgotten dream. And if he seriously attempts to picture an eternity of existence, he will be appalled at the prospect. People enter the City of Immortality with perfect joy and confidence, but in the fullness of time they seek to pass through its gates and descend to the plains of earth, where they are free to die.

Belief in a future life does not depend upon evidence—for there is none; it depends upon instinct. The

natural growth of the idea of a "spirit" surviving death has been explained; and that idea must have been greatly strengthened by the instinct of self-preservation. In the struggle for existence, those who had the strongest "will-to-live" would survive (other factors being equal); and the longer this natural selection operated, the more emphatic would become the deep-seated desire to avoid death in this world and annihilation in the next. If the human race did not instinctively rebel against annihilation, it would have faded out of existence long ago. This rebellion has been further strengthened by the natural egoism of man, which makes him regard his individuality as of real importance in relation to the eternal, and the fate of his species the central concern of the universe.

It requires, therefore, a certain philosophical repression of instinct to regard the doctrine of immortality in its true light. Those who follow their feelings never allow themselves any doubt about the matter; those who follow their reason are never more than cheerful agnostics. Practically the only *reason* given for survival after death is that some future existence is required to make up for the shortcomings of this existence. It is, however, a poor compliment to Providence to insist that poetic justice can be done only after the fall of the curtain. To offer a post-humous solution to the problem of evil is to avoid it altogether. We who are living inherit the problem—we have to live under the conditions imposed by it—and it is a form of moral bankruptcy to declare that the solution lies behind the blank wall of death. Nevertheless, the tendency of supernatural religion is to force us to look for hope beyond the grave. Accord-

ing to the creeds, we are miserable sinners, in whom there is no health; we must look for salvation hereafter to the Power which has for inscrutable reasons made salvation in the present, and by our own efforts, impossible.

This view of things will disappear when we realise that Evil is not an absolute and universal principle, but a condition with which man in his social relations is alone concerned. The evolution of morality has been, as we have indicated, a slow and painful process of adjustment between inherited and acquired habits. That adjustment is not yet complete; and it probably will never be complete, because the evolution of the community demands an increasingly delicate control of the actions of its members. In this continual conflict, with its triumph and its tragedies, its complexity and its simple idealism, its harshness and its humour, lies the fascination of life. It is upon this conflict, and not upon any arbitration in an imaginary beyond, that the attention of religion must now be concentrated. Religion must extract from life itself the living ideal, and it must show how we, within the bounds of life itself, shall labour to bring our generation one step at least nearer to it.

Here—in what may be called the mechanism of progress—lies one of the essential differences between supernatural religion and the religion of the future. Instead of basing our attitude towards life upon a dogma, a spiritual assumption, an intuitive principle, or an imaginary Law of God, we base it upon life itself. Instead of answering problems with a text, we solve them in the light of verified knowledge of

the physical, moral, and intellectual constitution of man. Instead of looking for salvation to the appearance of a Messiah with thaumaturgic powers, we seek it in the patient study of the universe. The men to whom we turn for help are not the men who formulate commandments, or who claim to have secured, by a dignified form of magic, the keys of heaven; they are the men who, by searching, find out man; the men who scan the infinitely great with their telescopes, and penetrate the infinitely little with their microscopes; the men who investigate plants and animals, rocks and oceans; the men who gather the slow harvest of facts about the human race and its environment; and the men who sift and classify these facts, draw from them, by synthetic power, their great lessons, or illumine them, by creative art, with a glow of warmth and beauty.

A religion inspired by such a principle is essentially a religion of the open mind. Both as to transcendental questions and as to problems within the range of experience, the mind is kept open, but in different fashions. Judgment is entirely suspended on transcendental matters, except in denying the assertion, often made on behalf of supernatural religion, that we have positive knowledge concerning them. There is always the speculative possibility that some day the intellect of man will rise above the limits now imposed upon it, and catch a glimpse of what is at present the unknown. But it is nothing more than a speculative possibility.

On subjects which are not transcendental—problems of physical and biological evolution, of ethics, of social progress, of natural philosophy in the broadest sense—the mind is also to be kept open, but only that the

greater certainty may be permitted to modify the less. Knowledge, as we have already emphasised, broadens down from generalisation to generalisation; it is not a residue of thought which can be expressed in a dogmatic creed, true for all time and in all places. The assumption underlying all forms of supernatural religion is that fundamental truth is a rigid formula which the mind ought to accept in unchanging faith, and upon which it ought to close, like the setting round a jewel. In Christianity, for example, the riddle of life is supposed to be solved by scriptures whose teaching every child is expected to master before he leaves school. These scriptures have been in existence for hundreds of years; and thousands of years hence—according to the orthodox theory—they will still provide the one and only solution for the riddle. If we regard them as a divine revelation, this absolute domination is fully justified. But when the real position of the Bible in the history of thought is realised, the hope of finding in it a permanent formula for truth is seen to be a chimera. Truth is not a God-given statement, independent of time and change; it is simply the latest deduction from classified knowledge. Like everything else in the world, it is evolving; and we only hinder its evolution when we attempt to crystallise it into “declarations of faith” which we place upon an altar and worship as eternally valid.

Is there, then, to be no certainty for us in the world? Are our minds to be in a continual state of flux? Questions of this kind are inevitable, and they are not to be answered by a simple *yes* or *no*. We may repeat the claim that there is more certainty in the doubts of science than in the affirmations of super-

naturalism; but we may go further and declare that positive knowledge of the world and of man, patiently pursued and keenly analysed, gives a far more profound and restful confidence to the soul than any form of dogmatic faith. The literature of religion is full of warnings about the imminent risks of Doubt; it tells of the agonies of Unbelief, and the terror of the faithful lest their grip upon some intangible essence should fail them. "Lord, I believe; help Thou mine unbelief," is a poignant expression of the essential uncertainty of "faith." The explanation of this anomaly—the co-existence of despairing fear with the declaration of absolute knowledge—is simply that the faith has no real certainty at all. Like the faith itself, this certainty is mythical; it is a shadow which vanishes in the first glimmer of fact.

The consolations of supernatural religion form a favourite theme for the orthodox. Unbelievers are pitied—though not by themselves—for the lack of certain sustaining hopes. Orthodoxy, however, is not all balm. Against the hope of heaven we have the fear of hell; against the assurance of salvation we have the conviction of sin; against the help of God in this world we have the terror of the hereafter; against the blessings of belief we have the curse of being afraid of doubt. The courage of faith is less than its cowardice. Churches prove their cowardice by their desperate anxiety to suppress heresy; first, by direct persecution and later by legal disabilities and moral ostracism. Individual believers hesitate to read books which criticise their faith or present the scientific view of the universe, because they feel that their faith must be sheltered if it is to survive.

Contrast this attitude with that of a man who has won to his faith by doubting all things and proving all things. He has lost the fear of the supernatural; and the old shrinking from the menace of doubt has been transformed into a confident habit of learning everything and welcoming the light of knowledge from every quarter. His intellect has come out of the cloister and walks abroad, rejoicing in its freedom. His discipline is not a pilgrimage of assent in one creed or another, but a studious unfolding of the mind to wider and wider aspects of truth. The notion of treasuring a formula as the receptacle of eternal truth is to him the fundamental superstition.

The essence of the Rationalist view is, in short, that we must apply to religion the same methods of investigation and criticism which we use without hesitation in the ordinary affairs of life. Our faith must grow as our knowledge grows. And if we follow this principle, if we base our opinions on the information we gather about human nature and its environment, we shall not lack the comfort of a practical certainty; but we may well need the intellectual and moral enthusiasm which puts that certainty continually to the test. We inherit a tendency to cling to dogmas and to familiar modes of thought; this tendency has been accentuated by the enormous stress placed by Churches upon unalterable creeds and ritual; therefore it requires a strong and persistent effort to hold every fact open to confirmation, every theory open to modification, and every hypothesis open to rejection. The scientific world is not free from dogmatism, because even men of science are not free from human weakness; but science can at least claim that such dogmatism is

contrary to its first principles. Its ideal is one of mental progress, not of fixity. It admits that the mind which discovers perfect and permanent peace in a certain position is already dead.

A direct inference from the principle of Rationalism is that every man must make his own religion. Saints and apostles have dreamed of the day when all men will profess the same faith, subscribe to the same creeds, worship the same God in the same way, and present the spectacle of a world-wide uniformity in affairs of the spirit. Missionaries have been sent to the ends of the earth in pursuit of that ideal. Churches, realising that their differences in dogma and forms of worship do not tend to "edification" and are a source of weakness in dealing with scepticism or indifference, are labouring to establish a re-union of sects. But we are getting further and further away from the possibility of universal assent to a series of transcendental propositions. We are getting nearer the time when every man will refuse to accept a cut-and-dried religious faith at the bidding or the exhortation of some other man. Leaders of thought there will always be, but their power will depend upon the illumination they give to facts which all of us can verify. Each of us, therefore, will have to go upon our own pilgrimage towards the ideal. We shall have to gain our knowledge of the spiritual world as we gain it about the everyday world of which it is a reflection—by experience, by observation, by studying the origin and growth of things, by making our own synthesis of fact and deduction.

The end in view, therefore, is not the choice of a religion, but the making of a religion. This is a far

more attractive prospect than that of searching for a creed which we can induce ourselves to sign, or a label which we can carry without misgiving. It brings religion into closer touch with life itself, because we all have, within limits, the making of our own lives, and we all have our own ideas (borrowed or otherwise) of what life ought to be. No two men are identical in physical characters, or in the moral and intellectual capacities based on these characters. Therefore each man is entitled to form his own conception of the art of life. Unless we are content to be vegetative or merely imitative creatures, we must try to weave our own pattern in life; and the more we impress our individuality upon the pattern, the more satisfied we are, yet the more we stand apart from our fellows.

Amidst this diversity, however, as amidst the diversity of non-human nature, there is unity. We may all try to realise our capacities in our own way, but we are likewise all trying to give the fullest scope to these capacities. Self-realisation is the uniform impulse; and our success in the art of life depends upon our knowledge of ourselves and of the opportunities which our environment holds, or can be made to hold, for the exercise and the development of our faculties. The ideal which supernatural religion has held before us is a static one; we were taught to look forward to a life of perfect, unalterable bliss, of eternal rest. The ideal of natural religion is dynamic; it urges man to the continual exercise of his powers; it shows him with each dawn a further horizon towards which he must march.

The old ideal was the negation of life; the new ideal is the assertion of life. Its object is to reveal the

dignity and magnificence of life, to raise it to its fullest vigour and its highest expression; it is also no less to make clear the meanness and the misery which alloy the gold of existence, to make the source of these impurities visible, and to urge men to use the only instruments by which they may be removed.

Here we touch upon the element of unity in the religion of the open mind—the element which at the same time separates it from all forms of supernatural religion. The element is a matter of *method*. Each Rationalist may design the edifice of his religion according to his individual fancy, but he builds upon the same basis as other Rationalists, uses the same kind of materials, and follows the same primary laws of stability and form. This community of method, which rests upon an identity in mental attitude, renders the movement towards a true natural religion a sympathetic one, and ensures that the pilgrim, although he must pursue his own path, need never be out of sight of kindred souls. On social, political, scientific, and philosophical questions there is every variety of opinion among Rationalists; and it is certain that no two men or women among them would set forth their views on the great issues of religion in the same words. But they are perfectly harmonious in working to bring about the time when everybody will adopt as a matter of course the “mental attitude which unreservedly accepts the supremacy of reason and aims at establishing a system of philosophy and ethics verifiable by experience and independent of all arbitrary assumptions or authority.”

It is characteristic of this attitude that it is utterly opposed to intolerance and to the spiritual arrogance

which inspires intolerance. No one can honestly attempt to build up an encyclopædic view of life (such as must be provided as the framework of the religious ideal) without being impressed by the complexity and volume of available knowledge, and by the vastness of the region which has yet to be explored. True knowledge brings with it that kind of intellectual modesty which was so finely displayed by Charles Darwin. It is a quality which, being the outcome of a genuine desire to get at the truth, gives an urbanity to discussion which prevents it degenerating into controversy. It is a quality which is not easily won, because man is traditionally prone to be pugnacious in his opinions, and contemptuous of those who disagree with him. But when a religion has no creeds, it has no impulse to persecution. It seeks to convince people by demonstration and by argument, not to "convert" them by an assertion of infallibility or by an appeal to the emotions. Moreover, Rationalism recognises that a multiplicity of opinions is a healthy intellectual state. The frank expression of such opinions, and of the grounds on which they are based, is a powerful stimulus to mental activity and an essential process in the discovery of truth. All that the Rationalist asks is that these opinions shall be realisable in the current coin of experience.

CHAPTER XII

THE MECHANISM OF PROGRESS

RATIONALISM is generally described as "materialistic," because it is based upon the solid facts of this world, and not upon ghostly speculations about the next world, or about the spiritual essences which are supposed to inhabit the tangible things of life.

This label is, however, most ambiguous. Sometimes it is used in the sense indicated, and sometimes it is used to suggest that Rationalists are "materialist," as opposed to "idealist," in their metaphysical views, although, as we previously indicated, Rationalism is just as agnostic towards systems of metaphysics as it is towards supernaturalism. But most often the word "materialist" is used as a reproach, its philosophical meaning being carelessly abandoned for its social or colloquial meaning. To call a man a "materialist" is most often to accuse him of being devoted to the gross pleasures of life, to the pursuit of wealth and the love of animal ease, the piling up of worldly possessions for the love of ostentation and sensual delights.

It is necessary, therefore, to point out that there is not the slightest connection between philosophical materialism and the materialism symbolised by the human guinea-pig. Darwin, for instance, was a materialist in his outlook on things, but in actual life he pursued, with a saintly courage, the most spiritual

ideal of all—the ideal of Truth. He worked for no material reward, and he was all the more spiritual in his ambitions because he did not hope for a reward in heaven. The higher life of the “soul”—the love of fine thoughts, the cultivation of sensibility to delicate shades of beauty in sentiment, in music, in art, and in the whole range of emotional life—is no more dependent upon belief in the supernatural than is the moral life. When we realise that spiritual values are simply the refined essence of natural values, that the spiritual life is simply the natural life raised to the highest power, then the supernatural becomes merely irrelevant. The true materialists, in the gross sense, are those who imagine that if their egos are not destined to survive death, the only thing left for them is to “eat, drink, and be merry.” What Rationalism does is to abolish the dualism between the “spirit” and the “flesh,” and to show that the ideals of perfection in thought and in emotion which man has attributed to divine inspiration are visions born from his own intrinsic faculties, evolved by natural means through the process of the ages.

A direct inference from this view of things is that these higher faculties are capable of still further evolution. There is no reason to believe that the human brain has reached the limit of its powers. The occasional appearance of a genius shows that there is ample room for a rise in the average of mental capability; the occasional appearance of a beautiful moral type indicates the same possibility in the ethical sphere. Therefore the practical purpose of religion—or at least of Rationalism—is the evolution of a higher type of character. The trend of evolution points towards the

goal, and also suggests the method by which the march towards it may be hastened. All unconscious of the process, we rose from the brute to the human, from the savage to the barbarian, from the barbarian to the civilised man; now that we are conscious of the process, now that we understand its mechanism, we have an instrument of tremendous power in the further uplift of the race.

The formation of character is, of course, one of the objects of supernatural religion. Until lately it was not a very prominent object, because the main end in view was preparation for heaven, and for that end "faith" was superior to "works." But the Churches are now tending towards the view that behaviour is of more account than belief, and are giving more attention to the improvement of individual and social conditions on this earth.

It is worth while, therefore, to consider how limited and how feeble their instruments are, especially since they relinquished the rod of supernatural fear. Their main agency is *exhortation*. The sermon is still the chief means by which they hope to influence the actions of men and women. But it is notorious that exhortation has only the feeblest and most superficial effect on human character. Think of the millions of sermons which have been preached and published during the last few centuries; think of the thousands of pulpits and platforms from which, week by week and day by day, the saving message is proclaimed; and then turn to consider the strange indifference of the mass of the people. The huge incongruity between effort and result finds frequent expression in religious journals; it is a fertile source of the pessimism of the clergy.

As a matter of fact, the sermon is a survival of the days when the spoken word was practically the only means of communication between men. A prophet who had a message to deliver was obliged to gather an audience, and to influence them either by argument or by playing upon their emotions. With crowds the appeal to the emotions is most effective, and consequently the Church service has nearly always sought to strengthen the lesson of the sermon with beauty in architecture and music, and with impressiveness in ceremonies. The method of the Churches is, to put it descriptively, a mingled command and caress.

If this method were really efficient, the world would have been regenerated long ago. But it is not efficient, and the Churches practically admit its failure by their anxiety to get control of the secular schools, by their intrusion into party politics, and by their discussions on legislative and social reform. If the Churches could, by preaching, prayer, and psalm, "convert" the world, there would be no need to appeal to such material agents for improving the character of the race. Those who still believe in regeneration by faith declare—and with reason—that the function of the Church is to point out the way of life, and not to dabble in the mud of politics or rattle among the dry bones of Acts of Parliament.

It is fully time, therefore, that we should study the means by which human character can really be influenced and elevated. If our object is to produce a race which is healthy, intelligent, and morally well-disciplined, then we must investigate the factors which

govern the physical, mental, and moral faculties of the human being.

Broadly speaking, every one of us is a product of heredity and environment. We are born with a certain disposition, latent or active; and the development of that disposition is affected by the conditions which surround us from birth. Before people began to study human life scientifically they paid little attention to heredity, and imagined that environment was the dominating factor. Every child had the same kind of "soul," and might, if brought up in the same way and taught the same things, achieve the same title to enter heaven. If he did not "rise," it was because he chose, out of his free will, to remain in the grip of original sin. The idea that a child's character was only the last link in a long chain of cause and effect, and could only be partially modified by training, would have been regarded as an impious absurdity.

Yet it is towards this conviction that we are surely tending. The relative importance of heredity and environment cannot be stated with exactness, but there is no question that, in the upward movement of the race, the former is of supreme value. Improved environment may raise an individual above the physical, moral, and intellectual level he would otherwise have attained, but that improvement is not transmitted to his descendants. "All modern scientific inquiry," as Mr. and Mrs. Whetham write in their *Introduction to Eugenics*, "goes to show that the direct influence of environment, whether in the matter of health, education, or sanitation, is limited in general to the effect produced on persons actually in existence and their immediate offspring, and that it can alter in no

way, either to improve or to impair, the racial qualities of more distant generations, physically or mentally, except in so far as it encourages or obstructs the increase of one type of humanity rather than another."

Thus we are forced to turn our attention to heredity in order to discover the key to the central problem of civilisation—the progressive improvement of the *quality* of the race. Remembering that the human species belongs by origin to the same stem which produced the various forms of animal and vegetable life, we turn to these forms for a hint as to how this improvement may be effected. For centuries man has been engaged in improving the quality of horses, oxen, and sheep, and in producing new species of domesticated animals by the process of selective breeding. He judges animals, not by their place of origin, but by their pedigrees. He has deliberately encouraged the multiplication of those which had certain qualities, and he has simultaneously discouraged the multiplication of those lacking such qualities. By this simple means he has changed the qualities of the stock so much that the present representatives can hardly be recognised as descendants of their original parents.

Until recently the process was conducted to some extent on a trial-and-error basis. Breeders were repeatedly thwarted by the appearance of undesirable qualities in the offspring of parents which did not possess these qualities. The researches of Mendel threw a great deal of light on these puzzling anomalies, and gave men a chance of producing stocks which would always "breed true." For example, we have been able, by observing Mendel's law of inheritance, to obtain a wheat which will invariably produce a

grain of exceptional quality and immune to the disease of "rust." The problem is comparatively simple in the case of wheat; but there is no reason why it should not be likewise soluble in the case of animals, when we gain a closer grasp of the complexity of the conditions.

In man, of course, the conditions are most complex of all. Moreover, it is impossible to apply the process of selection in the same way as we do with animals under our control. Men and women consider themselves free to reproduce their kind, without considering the laws of inheritance. But we have taken an enormous and irretraceable step when we fully recognise that, in Galton's words, "a man's natural abilities are derived by inheritance, under exactly the same limitations as are the form and physical features of the whole organic world." When we admit that "each generation has enormous power over the natural gifts of those that follow," we must, with Galton, "maintain that it is a duty we owe to humanity to investigate the range of that power, and to exercise it in a way that, without being unwise towards ourselves, shall be most advantageous to future inhabitants of the earth."

This is the heart of the science of eugenics—one of the youngest of the sciences, but full of promise for the benefit of humanity. It is a science which works for posterity, which sows for a harvest which the sowers will never reap. The enthusiasm which it has evoked is a final rebuke to those who accuse biological science of being "materialistic" in the lower sense. It is a science which for the first time opens out to mankind the prospect of a deliberate and intelligent movement towards the elimination of disease,

the conquest of intellectual decadence, and the progressive strengthening of the moral fibre. For the time being, the workers in this field are content to accumulate and classify facts; they are labouring to dig the foundations deep and secure. For the time being, they do not choose to go beyond principles of general biological application, or to suggest action save in such obvious directions as the control of the feeble-minded and the criminal. But their patient labours are sustained by a magnificent hope; they know that they have got their fingers on the inmost springs of human progress. And they may also comfort themselves with the thought that it is a great deal to have awakened the public conscience to an appreciation of the laws of heredity. It is something to have made people realise that nothing in heaven or earth can sanctify a union which means the perpetuation of disease. It is something to have broadened the range of human sympathy, beyond the generation whose sufferings we witness, to those yet unborn whose happiness or despair lies in our hands.

However limited the influence of environment may be upon the permanent tone of the race, there is no question that it has a great deal to do with the well-being of each generation, considered by itself. The healthiness or otherwise of our surroundings, the nature of our education, and the peculiarities of our experience of men and things: all these and the other elements in that comprehensive term "environment" may make or mar the faculties we owe to heredity. Only to a certain extent are even the strongest of us masters of our surroundings. The form our characters take is the

resultant of the reaction between our innate forces and those to which circumstances subject us.

The moulding power of environment being especially great in the plastic years of youth, the effect which a religion may have upon principles of education is a crucial point in estimating its value to humanity. And here Rationalism, tacit or avowed, is effecting a slow but complete revolution. The question is not one of secular education or Bible teaching, although it is worth something to prevent the barbarities and indecencies of the Old Testament being associated in the minds of children with the beauty of holiness. The change goes far deeper; it strikes at our root ideas of what education means, and how the machinery of teaching should be designed and made to work.

We inherit our educational systems from the days when everybody firmly believed in "original sin" and the essential depravity of the human race. The initial assumption was that children were "limbs of Satan"; they were treated accordingly, with the result that they often behaved accordingly. Education was therefore a purge, a spirit-subduing discipline, a deliberate reflection of the monastic ideal of routine performances and mechanical obedience to laws and formulæ. The emblem of every school was an upraised birch, with the words "Thou shalt not" written beneath it in letters of fire. Its method was precisely that imposed by Moses on the ancient Jews in the name of the Lord—a method demanding unquestioning obedience at the risk of summary punishment. Children were ordered to learn by rote; to pack their brains with the husks of knowledge; to say Yea to the master's Yea, and Nay to his Nay; to curb their vitality, their restless

curiosity, their joy in doing, being, and pretending, their every healthy instinct; they were expected to believe that their natures were inherently vile, and that they would never be "good" unless they could train themselves to do everything they did not want to do. The inducement to do so was a double one, and immoral in both its phases—material reward on the one hand, and material punishment on the other.

No one can reflect upon this familiar system without realising that it must have given the child a hopelessly twisted view of right and wrong. Under a regime of mechanical obedience, "right" becomes that which is rewarded in some tangible fashion by teacher or parent, and "wrong" that which is visited by punishment—if it be found out. Anything better calculated to make virtue detestable it would be difficult to conceive; anything more subtly designed to evolve hypocrites and prigs could hardly be imagined. And it is owing to the ideas thus forced upon the impressionable minds of children that they find it difficult in adult life to realise that true virtue lies in joyous activity, in the full expression of mental powers and sympathetic emotions. Accustomed almost from birth to morality being forced upon them by arbitrary authority, they are slow to appreciate that it is a natural state of things to which their minds and hearts would, of their own accord, give an enthusiastic assent and a willing conformity.

Knowledge of the process of human evolution has given us a radically different view of child nature from that which was inspired by the abominable doctrine of original sin. Just as the human embryo summarises the course of development from the primitive organism to the highest animal level, so the human child shows

in rough outline the stages of progress from the savage state to civilisation. It is natural for a child to be egotistical, to be self-assertive, to be boisterous and full of energy, even to be cruel; these are indications of stages in the rise of man, not signs of his fall. In normal cases the child grows out of them as naturally as his limbs grow longer and his brain more capable. The basic purpose of education, therefore, is not to thwart and suppress the natural inclinations of the child, by cajolment or by threats, but to stimulate and direct the exercise of his faculties, and to give full play to that capacity for affection which is the root of sympathy, which is the root of virtue. The difference between scientific education and theological education is, in a word, the difference between a profound distrust of, and an assured faith in, the goodness of human nature. Acting on that faith, we shall encourage our children to be self-reliant, to work at things which bring them joy, to be adventurous in spirit, to co-operate with others, to use their interest in life so as to acquire real knowledge, to exercise their imagination and their love of others; in short, to *realise themselves* in that high degree which is only possible when the process is carried out in harmony with the self-realisation of others.

This fundamental faith in human nature, however, does not limit itself to the child; it is the essential message of Rationalism to the human race. It urges man to have done with fear, with self-depreciation, with cowardly despair of his own powers; it bids him look back upon the long struggle upwards from the brute—a struggle which, amid all the apparent reverses, has been a struggle upwards; and on the strength of

that tremendous achievement it bids him take heart. It offers him no immediate earthly paradise, and no escape to a paradise beyond; it does not shut its eyes to the suffering, the disease, the tragedy, the ignoble elements which mingle with the glory of life. But it tells man that these elements are the legacy of the age-long struggle, and that he may, by patient and unflinching use of his highest faculty—his reason—understand their origin and their operation, and so come in time to learn how they may be minimised or extirpated.

Above all, Rationalism is an acceptance of life. Supernatural fears and supernatural hopes alike have taught man to deny life, to despise it, to evade it. The asceticism which flourished in the ages of faith, the monastic ideal which has been held up before man as his true apotheosis, the persistent abasement of human nature before man-created powers of darkness, the prayers for help and for deliverance—all these are a cowardly negation of life. Rationalism atones for the loss of the “other world” by leading us to realise the possibilities of this world. It shows that with faith in life and with knowledge of life we may mould it to shapes of beauty more true to the highest in us than any of the visions of life-denying saints.

The prizes of life are for those who *live*, who realise their capacities to the utmost in action as well as in thought. And the faith of Rationalism is that this self-realisation, in its highest forms and under the guidance of reason, is most consistent with the progress of the race. It is faith in work, in service, in the cultivation of inherited powers.

Moreover, by an apparent paradox, this yea-saying

of life is the best preparation for the acceptance of death. The last of the terrors of supernatural religion to be conquered is the fear of death. In itself, death is as natural as sleep or the setting of the sun; but by regarding it as the gateway to a new and problematical existence, supernaturalism has filled it with the dread of the Unknown. Inspired by a distorted kind of poetic justice, it has bidden men shudder at the possible fate which lies beyond the tomb, and has soothed the agony of that thought with the alternative of infinite bliss. When men no longer fear that possible fate, they have nothing to disturb the serenity of death. In spite of many imaginative descriptions, death-beds are generally peaceful. If the dying have any concern at all, it is almost invariably for the well-being of those they leave behind them. Likewise, the grief which broods over a tomb is not grief for the dead, but for the living who lose a parent, a friend, or a beloved child. Even that grief is no more than a gentle melancholy when the dead was full of years, and laid himself to rest as a labourer tired with a long day, and grateful for oblivion. The sting of death comes when it robs us of the young and the strong, those who have not finished their work in the world, and whose loss is a living wound. In such circumstances even the fervent believer rebels at the thought that the tragedy is due to the deliberate "will of God." He knows in his heart that not a single man or woman in the world could *will* such a catastrophe. And we, who are beginning to gain the mastery of life, and who are learning the secrets of those diseases which lie in wait for life, take no heed of this apology for premature death, but strive towards the day when

such catastrophes will be, like crime and war, memories of an unhappy past.

In the face of death and threatened disaster, the policy of Rationalism is not to find a solace for fear, but to get rid of fear. It robs the Unknown of the terrors which have so long haunted the mind of man. It makes the world beyond the veil no more oppressive than that from whose nescience we emerged.

Nevertheless, the heart of man, we are assured, yearns for ghostly consolation in time of trouble. Is it really so? When disaster overtakes us, when we falter by the way and feel the burden of life too heavy for our courage, are we really sustained by the thought that our agony or our bereavement was ordained from all time, or are we comforted by the sympathy and aid of a parent, wife, husband, friend, or child, who loves us and suffers with us? The first uplift of man came with the growth of sympathy; and in our day, even among the men and women who sit in darkness, the sight of suffering stirs a deep impulse to render aid. As mankind progresses, the sense of sympathy will become more delicate and more powerful, until the consolation offered by our fellow-creatures will need no reinforcement by the imaginary deity who is, at the same time, the deliberate cause of our necessity. Man will turn to man in this as in all other emergencies; he will seek, in the voice and the hand-clasp of others, the strength which his own spirit may not afford him. And now that suffering is understood as an inevitable accompaniment of sentient life in evolution, it becomes a part of nature which men may subdue by knowledge of its causes. In the days to come men will meet it with the courage which comes of knowledge.

CHAPTER XIII

THE FUTURE OF THE CHURCHES

THE future of organised Christianity is a source of grave anxiety to the Churches. It is also a subject of great interest to the prophetic historian.

With their sphere of influence upon the affairs of men shrinking before the continual growth of scientific and secular effort; with their power in their own world of religion weakened by corrosive criticism, and with the great majority of educated men and women indifferent to their authority, it is not surprising that the clergy should turn to the past, rather than to the future, for comfort. The past is certainly consoling. Over and over again, in the long conflict between faith and doubt, the attack upon theology seemed on the point of being pressed home. The first heretics, it may be said, proved their case against Christianity; but Christianity survived. Philosophers like Hume, humanists like Voltaire, critics like Paine, poets like Shelley, led their onslaughts with army after army of adherents; yet the building of churches went on. Even the attacks of science in the nineteenth century, which seemed to strike a fatal blow at fundamental things, have passed away without abolishing prayer and worship or altering the text of our creeds. Periods have been known in which unbelief seemed on the verge

of triumph, but they were invariably followed by a reaction which brought the Churches back into power over the mind and feeling of the public.

It is unlikely, however, that any keen-eyed theologian of the present day will find comfort in picturing unbelief as a wave which will recede, a tide which must ebb. There is a difference between modern unbelief and the scepticism of Deists and philosophers in the seventeenth and eighteenth centuries. These writers knew nothing of Higher Criticism; and science had only begun to open its infant eyes. They did their best, with the instruments which lay ready in their hands, to demonstrate the essential falsity of the Christian claim to truth and infallibility; and it is impossible to admire too deeply the skill with which they advanced their arguments on the ground of common-sense. But they were never able to force the Churches themselves to alter their outlook upon creation; they never succeeded in dislodging the Churches from the political, social and spiritual position in which they were deeply entrenched. Moreover, the mass of the people were unlettered; it was easy to keep the literature of doubt away from all but the few whose influence did not matter; and by excommunication, persecution, ostracism, and the other traditional methods of suppressing new thought, it was possible for the Churches to annul the effect of arguments which, if driven home to the intelligence of everybody, would have destroyed the allegiance which theology inspired among congregations trained to regard heresy as a crime.

Modern Rationalism is not merely a renewed phase of old scepticism. It is much more formidable in its

direct offensive on critical grounds; and it finds the promise of permanency through its bond with constructive science. This combination of frontal and flank attack has forced theology to do what it never did for the pioneer heretics; that is to say, to retreat and to admit its retreat. The Churches fought against the Higher Critics until the scholar's view of the Bible could no longer be denied; then a series of adjustments was made until Higher Criticism itself was expounded from the pulpit. They fought against the lessons of geology and biology until it was realised that antagonism would be more deadly than submission; then they performed a parallel series of adjustments which led to the declaration that science was on their side. Whatever view one may take of these adjustments, it is clear that official Christian teaching can never be the same as before. A theologian of the early part of the nineteenth century, if brought to life again, would be convinced by a survey of modern theology that anti-Christ had been triumphant.

Nevertheless the antiquated theology remains in the formal creeds of all the leading Christian sects. Ritual, ceremonies, fasts, and festivals are carried out in the old conventional way. The creeds are repeated Sunday after Sunday, just as if the ancient words held their ancient meaning. Babies are baptised according to the rites which imply belief in original sin and the eternal damnation of the unbaptised. Women are "churched," although we no longer regard the bearing of children as a filthy process which demands a special effort of apostolic cleansing. Marriages are still "solemnised" in church, just as if it were still held that a clerical pronouncement could add anything to

the holiness of human love or offer any substitute for the natural sacrament. Death-bed repentance is still urged, as if the vision of Jehovah on his judgment seat were still an article of faith. Funerals are still accompanied with a service which implies that a confident belief in the resurrection of the Son of God from the dead is a guarantee of immortality. The Bible is still put into the hands of children as the Word of God, although its conglomerate human character is the first commonplace of criticism. It is still offered to them as the repository of morality, although many of those parts of it which children can understand are morally revolting. Every article in every creed has been re-interpreted until its original authors would fail utterly to recognise their production; yet formal adherence to creed is demanded of everyone who professes himself a Christian.

The sharp and increasing distinction between the ancient outward form of faith and its changing content is a source of both strength and weakness to the Churches. It impresses the ignorant and the easy-going by its affectation of unalterable infallibility. It preserves an appearance of stability which imposes upon those who are willing to believe—that is to say, the great mass of the public. At the same time it convicts the Churches of insincerity. The reinterpretations of dogma are ingenious, but the greater their ingenuity the less they belong to the wisdom which was supposed to come from the mouths of babes. The reconciliations of theology and science are all of a class with the painful effort to make Genesis harmonise with geology by saying that “days” meant “æons.” Within the borders of faith there is no escape from

the dilemma that it is equally invidious to conceal the discrepancies between ancient creeds and modern thought, or to attempt to bring them into harmony by verbal gymnastics. "At present," says Canon Streeter, "with regard to many a tenet of no small importance, if we are candid with ourselves and others—as religious people, unfortunately, so seldom are—we can only say that we truly believe that there is 'something in it,' or that it is 'more or less true.' " This is not the sort of admission which prefaces the creeds when they are recited, or which is impressed upon candidates for confirmation and ordination. The Church, in a word, speaks with two voices—the ancient one for the unquestioning soul, and the modern one for the disciple who brings forth his doubts.

At congresses and other meetings the Churches deplore their slackening grip upon the minds and hearts of the people. They are accustomed to blame the indifference, "materialism," and love of pleasure characteristic of the age. A little heart-searching, however, may lead them to realise that the cause is not wholly with the world. Apart from the fact that their gospel (in any of its phases) does not convince educated people accustomed to free thought, they do not give the impression of sincerity. "It should not be assumed," writes the Rev. Charles Shebbeare, "that the pastoral aim is intrinsically inconsistent with intellectual frankness." Nobody would make that assumption if the Churches were as openly concerned for truth at all costs as they obviously are to rescue their written creeds from dissolution. They have not abandoned their ancient errors; they have merely "re-interpreted" them. Even Hell is explained away as

a "mental state," as if the notion of God imposing mental torture on his own creatures for their sins were not as abominable as the old flame-horror. The first thing an honest man does when he realises a mistake is to confess it; and the last thing a Church ever does—as an institution—is to admit that it was wrong.

The task of Rationalism is, in large measure, to force the Churches to abandon this form of hypocrisy and bring their spoken creeds into harmony with their unuttered thoughts. In matters of belief, the everyday principles of good faith must be brought into operation. As far back as seventy years ago candidates for admission to the clerical ranks of Scottish Churches were invited to sign the Confession of Faith with "mental reservations" on the Calvinistic items against which their conscience revolted. Anybody who insisted upon recording these mental reservations in signing the Creed was not admitted to the ministry. At the present time the question as to how far the signing of a creed commits a man to its plain meaning continues to exercise the casuistry of the orthodox. "When," says Canon Streeter, "a clergyman recites, as part of a traditional liturgical service, a form of words upwards of fifteen centuries old, he undoubtedly commits himself to a hearty assent to its general intention. He is not supposed to be committing himself to that literal affirmation of every individual statement which might be expected of him in the case of an affidavit submitted to him for his personal acceptance." In other words, the standards which apply in law and business affairs are too rigid for the declarations which Christians are required to make upon the most solemn and vital affairs of the soul.

It is no apology to urge that the people understand that nothing more than a hearty assent to general intention is implied in the words "I believe." Laymen are not quite so agile as the clergy in putting new meanings into old words. They are more inclined to imagine that the clergy mean what they say. When Canon Streeter remarks that "several of the clauses of the Apostles' Creed, those, for instance, which speak of Creation, of Heaven and Hell in connection with our Lord's ascent and descent thereto, and of the Day of Judgment, are, by common consent, admitted to be symbolical," he must be well aware that the men who framed these clauses would have burned at the stake anybody who dared to treat the recorded events as mere symbols. Moreover, these familiar words carry their familiar meaning to ninety-nine people out of a hundred. And after all, a symbol is a sign for some positive reality. The Cross is the symbol of salvation through the blood-sacrifice of the son of God. Thus the Christian symbolist is under obligation to explain what he means by treating his credal statements as symbols. Canon Streeter thinks that a clergyman may claim to be absolutely sincere in treating certain clauses in the Creed as symbolical if "with all due regard to appropriateness of occasion, and with all due respect to the susceptibilities of those who think otherwise than himself, he makes it perfectly clear to those to whom he ministers that he does claim this particular right." One would have thought, however, that the claim would have been prefaced as a matter of course to every sermon and every recital of the creeds. Further, every symbolising clergyman is equally under obligation to define the new meaning as

clearly as the old. The only way out of the tangle would be, in fact, to re-cast the creeds so as to express in plain language the reality which is alleged to lie behind those words which have been lifted from the solid earth to the clouds of symbolism.

The determination of the Churches to retain their written creeds, in spite of the divorce between modern thought and the spirit as well as the letter of these creeds, shows that the critical work of Rationalism is only half done. It may seem a hopeless task to induce the clergy to forgo the Jesuitical exercise of "re-interpretation," and to abandon their creeds as wholly antiquated. Nevertheless, the advance made by the Churches towards Rationalism during the last fifty years is far greater than the most sanguine Rationalist would have dared to forecast. Already the Athanasian Creed is being made permissive—which is the first step towards oblivion. Once the official blue-pencil is allowed to touch the Prayer Book, there is no limit to its operation. Again, there are many sects which are not bound by any Prayer Book or pre-ordained ritual. They can more readily undertake the delicate task of preserving their historical continuity in addition to harmony with modern knowledge. When we find liberal theologians like the Rev. Rhondda Williams declaring that the true Christian Church should be open to the heretic as well as the believer, we need not despair of witnessing, in the fullness of time, the formal abandonment of those confessions of faith which are the symbols of nothing but superstition.

The cleavage between words and realities, between the professed guide and the actual guide, is visible in the moral sphere as well as in the world of thought.

In spite of all that has happened to the Bible under critical and scientific attack, it is still offered as the final authority in ethics as well as in theology. The Churches cling, in theory at least, to the Biblical touchstone in matters of conduct. It is to their interest to ignore how faulty that touchstone is in its practical aspects. They turn a blind eye to the hideous barbarities of act and motive which pollute the greater part of the Old Testament, and they are content with the fact that New Testament morality, as embodied in the Sermon on the Mount, is fundamentally inconsistent with the practical teaching of the Churches themselves. During the Great War not a single Christian Church raised its voice on behalf of the characteristic Christian doctrines of universal brotherhood and turning the other cheek to the smiter. One and all blessed the soldier as he went forth to fight, sought to strengthen him with the service of communion in the fellowship of the Prince of Peace, and distributed Bibles to fortify him in the intervals of slaughter.

Many consciences were disturbed by the inconsistency between the principles which the Sermon on the Mount suggested, and those which were forced upon the nations at war. But this particular inconsistency is only an acute example of the lack of correspondence between the real and the ideal in the morality of Christians. No community and no individual could survive a complete application of the Christian code of morals; and the realisation of that fact has led people to act according to a lay morality which traverses the Beatitudes. This lay morality is a natural system of ethics, having grown out of the experience of the race; it is partly instinctive, partly embodied in laws and

customs, partly deliberate. It has the merit of being founded to a large extent upon observed sequences of cause and effect, not wholly upon alleged supernatural sanctions. Its ideal is not a contradiction of human character, or dissociated from it; it is a progressive development of motives and behaviour towards a goal which is always higher than the highest yet attained.

Theologians have admitted the evolution of dogmas about spiritual things. They must now admit that dogmas about morality likewise grow with the passage of time. To retain a code of ethics two thousand years old as the supreme guide to conduct is as fatal a weakness as to impose upon the modern mind all the demoniacal and miraculous elements of Biblical Christianity. If the spiritual authority of the Bible is no longer operative, neither is the moral authority. Yet the Churches expect the world to accept as a divine judgment for all time, on subjects like divorce and the liquor traffic, the words alleged to have been spoken by an individual whose very existence is in doubt. Creeds have become "symbolical," but the literal interpretation of moral judgments is still to be imposed. Here again, clearly, lies work for Rationalism. Its duty is to substitute a natural and self-consistent morality for the barbarism of the Old and the impracticabilities of the New Testament. The real court of appeal in matters of ethics is humanity, not any single book, and especially not one whose every page is the subject of doubt and controversy.

If the Churches were merely a school of philosophy, the destruction of their authority in spiritual and ethical affairs would imply their own death. But the Churches are much more than that. They are an

institution, with centuries of social and political prestige, and with millions of accumulated wealth.

Unquestionably their prestige is lower than it used to be. They enjoy less political influence than is visible through history; they have lost the power of open persecution; and even the force of social ostracism is enfeebled now that leading men in the universities, in literature, in science, and in politics are frankly agnostic. Their adherents form only a fraction—and a diminishing one—of the total population. As already emphasised, their present attitude of defence and apology is in significant contrast with their former arrogance.

The wealth of the Churches, however, remains and continues to accumulate. Current subscriptions to Church and mission funds may not be on so large a scale as before, but the invested funds and the legacies held by the Churches would enable them to survive even should the faithful cease to contribute. To the static inertia of the human mind is added the kinetic inertia of money. From the practical standpoint, money is the Church's one foundation. Until that wealth is confiscated the organisation will remain in being; and although much of the money is being used for the propagation of "advanced" doctrines which the donors would have looked upon with horror, it is still at the service of some form or another of supernaturalism.

It is impossible to estimate the stability thus given to the Churches, but if we imagine all the endowments, legacies, churches, mission halls, training colleges, and other clerical institutions to be wiped out of existence, we may gain some faint impression of the

task involved in the reconstruction of that colossal equipment and machinery. Modern piety would surely faint at the mere thought of it. As things are, the difficulty of extending Church organisation to meet the increase of population in certain districts is great enough to absorb all the attention and the material resources of the clergy.

When people disparage Rationalism as an intellectual principle, without place or habitation, they forget three things. They forget that the earliest and purest Christianity was essentially similar. They forget that material greatness, however imposing, does not constitute spiritual strength. And they forget the disabilities under which freedom of thought has always laboured. To this day it is doubtful whether a legacy for the purpose of disseminating doctrines subversive of Christianity is valid. Owing to the difficulty of finding a legal definition of Christianity and of proving that humanistic aims are really subversive of Christianity, it is almost certain that bequests to the cause of Rationalism could not be successfully challenged. But this hope is due merely to the growth of toleration making ancient statutes a dead letter; and the fact that it is even yet no more than a hope explains well enough why Rationalism cannot offer temples and institutions to rival those of supernaturalism, or a missionary organisation with one tithe of the material resources of the least of Christian societies. Only within the last decade or two has Rationalism been able to organise itself, save in the most elementary fashion. Only with the growth of heresy inside the Church itself has the heretic ceased to be an outcast. The spread of Rationalism has been the work of individuals,

struggling in their various ways to express truths which the Churches united to suppress. From a movement of that kind it would be absurd to expect the elements of material power.

The earlier Rationalists hoped to destroy the Churches; modern Rationalism is not perhaps so drastic. A plausible case could be made out for depriving ecclesiastical bodies of revenues which they employ in the preaching of doctrines radically different from those embodied in their trust deeds. But public opinion is neither sensitive enough nor logical enough to insist upon such a sacrifice. The machinery of the Churches will remain, and the machinery of Rationalism must therefore be directed, not to building churches and elaborating ceremonies of its own, but to rooting out the last traces of superstition from Church doctrine and to diverting the wealth of clerical orders to humanistic ends. With regard to the first phase of reforming action, it will be achieved by continuing the critical attack on all sorts of supernatural and obscurantic beliefs. "Negative" activity of this kind is probably a permanent necessity, since the habit of referring every question to the court of reason is one of the latest to be acquired by the human mind. The prevailing instinct is to let sentiment or emotion give the answer to Pilate's question. From this point of view Rationalism is a discipline, accepted as a rule of thought by the Rationalist, but demanding to be forced upon theologians and philosophers who attempt to crystallise their visions and protect them from the solvent of criticism.

It would be interesting to trace how far public opinion has lagged behind or gone ahead of Church

opinion in the liberalisation of theology which followed the triumph of the evolutionary theory and Higher Criticism. But by profession the clergy are the last to make an avowed change in their beliefs; and consequently the efforts of Rationalist propaganda have been mainly directed towards the thoughtful layman. The faculty of clear and independent thought is not, however, enjoyed by the multitude; and the grip which the Churches maintain upon our educational system makes it certain that each new generation is inoculated with the ancient notions which the Churches are so busy re-interpreting. Were it not for the spread of science and the increasing stress which is laid by the Churches themselves on humanistic effort, the labours of the Rationalist might be like those of Sisyphus. Clergymen feel the necessity of justifying their existence by taking a more active part in social reform and even in political movements. Their sermons are more and more concerned with questions of the day, which were once regarded as ephemeral compared with the overwhelming menace of eternity.

Under present conditions, such knowledge as the clergy possess on these questions must be acquired after ordination. Their course of training is still occupied almost exclusively by theology; it is scholastic, metaphysical, and limited to the comments of divines upon the superstitions of yesterday. The time may come when the profession which poses as an authority on social and economic matters will feel the need of systematic training of a scientific and humanist character. Concentration upon Christian evidences, Biblical exegesis, ecclesiastical history, and the details of ritual, is a poor preparation for teaching the practical

side of modern life. Nevertheless the impulse towards reform in clerical education will arise less from a recognition of this plain truth than as a result of the growing difficulty in securing candidates for ordination. Fifty years ago it used to be a common saying in the Scottish universities that a man who got into the prize list never went into the Church. Since that time the tendency for the more capable men to seek other professions has become still more emphatic. The field of secular activity has widened so much and offers so many more attractive chances of usefulness that the Church has become the last resort instead of the first. In order to appeal more forcibly to the modern spirit, the Church must broaden its scheme of training; it must give its probationers a grounding in science, in social history, in economics, and even in the foundations of politics.

At present this may seem a counsel of perfection. The Churches, it may be said, will see in the introduction of secular subjects an additional risk of drifting from those things of the spirit which it is organised to conserve. Nevertheless, if we continue in imagination the process of secularisation which is revealed in sermons and Church work, we are inevitably led to the time when the clergyman will be an expert in life, a trained observer and commentator, a guardian of the real eternal verities in a world too busy with the superficial and the everyday to keep them clearly in mind. The typical clergyman of to-day is far from being that, but he must either tend towards it or reveal himself as more and more of an anachronism. The destiny of the Churches is to be secularised or to become spiritually impotent.

Whatever happens to the creeds or the outward activity of the Churches, the secret of hope for humanity lies with the things which the Churches have until lately despised. When one looks broadly at the course of history it is astonishing to note how barren the supernatural and the metaphysical have been in vivifying ideas. Kepler and Newton revealed more of the universe than did any inspired prophet; Darwin got closer to the heart of Nature than the most profound of theologians; men like Tylor, Spencer, Lubbock, and Westermarck have taught us more about the realities of human nature than any sacred literature; and the patient pursuit of scientific knowledge in laboratories and studies has unravelled mysteries at which the keenest theological mind never guessed. Even in the region of ideals—those generalisations which draw up the scattered threads of life and reveal the tendencies which guide and inspire—the Churches have long ceased to be creative. Their present ideal of “progressive evolution” is borrowed, not from revelation, but from science. Their most strenuous efforts are directed to presenting ancient dogmas in a form which will not contradict the results of uninspired thought. And in the midst of their trimming and casuistry the real work of the world goes forward, heedless of the voice of ghostly authority, patiently gathering facts, courageously seeking truth, gratefully accepting the broadening gleam of knowledge as the one sure guide to the mastery of circumstance.

